XR-CA660X

SERVICE MANUAL

E Model

Ver 1.1 2003.02

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MG-25L-136

SPECIFICATIONS

Cassette Player section

Tape track: 4-track 2-channel stereo
Wow and flutter: 0.08 % (WRMS)
Frequency response: 30 – 18,000 Hz
Signal-to-noise ratio:

Cassette type	
TYPE II, IV	61 dB
TYPE I	58 dB

Tuner section

FM

Tuning range (E model): FM tuning interval:
50 kHz/200 kHz switchable
87.5 – 108.0 MHz
(at 50 kHz step)
87.5 – 107.9 MHz
(at 200 kHz step)
Tuning range (Saudi Arabia model): 87.5 – 108.0 MHz
Aerial terminal: External aerial connector
Intermediate frequency: 10.7 MHz/450 kHz
Usable sensitivity: 9 dBf
Selectivity: 75 dB at 400 kHz
Signal-to-noise ratio: 67 dB (stereo),
69 dB (mono)
Harmonic distortion at 1 kHz:
0.5 % (stereo),
0.3 % (mono)
Separation: 35 dB at 1 kHz
Frequency response: 30 – 15,000 Hz

AM (E model)

Tuning range: AM tuning interval:
9 kHz/10 kHz switchable
531 – 1,602 kHz
(at 9 kHz step)
530 – 1,710 kHz
(at 10 kHz step)
Aerial terminal: External aerial connector
Intermediate frequency: 10.7 MHz/450 kHz
Sensitivity: 30 µV

MW/SW (Saudi Arabia model)

Tuning range: MW: 531 – 1,602 kHz
SW1: 2,940 – 7,735 kHz
SW2: 9,500 – 18,135 kHz
(except for
10,140 – 11,575 kHz)
Aerial terminal: External aerial connector
Intermediate frequency: 10.7 MHz/450 kHz
Sensitivity: 30 µV

Power amplifier section

Outputs: Speaker outputs
(sure seal connectors)
Speaker impedance: 4 – 8 ohms
Maximum power output: 50 W × 4 (at 4 ohms)

General

Outputs: Audio outputs (rear)
Power aerial relay control lead
Power amplifier control lead
Inputs: Telephone ATT control terminal
BUS control input terminal
BUS audio input terminal
Remote controller input terminal
Aerial input terminal
Tone controls: Low:
±10 dB at 60 Hz (XPLOD)
Mid:
±10 dB at 1 kHz (XPLOD)
High:
±10 dB at 10 kHz (XPLOD)
Power requirements: 12 V DC car battery (negative earth)
Dimensions: Approx. 178 × 50 × 180 mm (w/h/d)
Mounting dimensions: Approx. 182 × 53 × 161 mm (w/h/d)
Mass: Approx. 1.2 kg
Supplied accessories: Card remote commander RM-X114
Parts for installation and connections (1 set)
Front panel case (1)

Note

This unit cannot be connected to a digital preamplifier or an equalizer which is Sony BUS system compatible.

Design and specifications are subject to change without notice.

E model
FM/AM CASSETTE CAR STEREO
Saudi Arabia model
FM/MW/SW CASSETTE CAR STEREO

9-874-290-02
2003B0500-1
© 2003.02
Sony Corporation
e Vehicle Company
Published by Sony Engineering Corporation

SONY®

TABLE OF CONTENTS

SERVICING NOTES 2

1. GENERAL
Location of Controls 3
Setting the Clock 3

2. DISASSEMBLY
2-1. Disassembly Flow 7
2-2. Sub Panel Section 7
2-3. Mechanism Deck (MG-25L-136) 8
2-4. MAIN Board 8

3. ASSEMBLY
3-1. Assembly Flow 9
3-2. Housing 10
3-3. Arm (Suction) 10
3-4. Lever (LDG-A)/(LDG-B) 11
3-5. Gear (LDG-FT) 11
3-6. Guide (C) 12
3-7. Mounting Position of Capstan/Reel Motor (M901) 12

4. MECHANICAL ADJUSTMENTS 13

5. ELECTRICAL ADJUSTMENTS
Tape Deck Section 13
Tuner Section 13

6. DIAGRAMS
6-1. Note for Printed Wiring Boards and Schematic Diagrams 14
6-2. Printed Wiring Board – MAIN Board – 15
6-3. Schematic Diagram – MAIN Board (1/3) – 16
6-4. Schematic Diagram – MAIN Board (2/3) – 17
6-5. Schematic Diagram – MAIN Board (3/3) – 18
6-6. Printed Wiring Board – SUB Board – 19
6-7. Schematic Diagram – SUB Board – 19
6-8. Printed Wiring Board – DISPLAY Board – 20
6-9. Schematic Diagram – DISPLAY Board – 21
6-10. IC Pin Function Description 23

7. EXPLODED VIEWS
7-1. Chassis Section 26
7-2. Front Panel Section 27
7-3. Mechanism Deck Section (MG-25L-136) 28

8. ELECTRICAL PARTS LIST 29

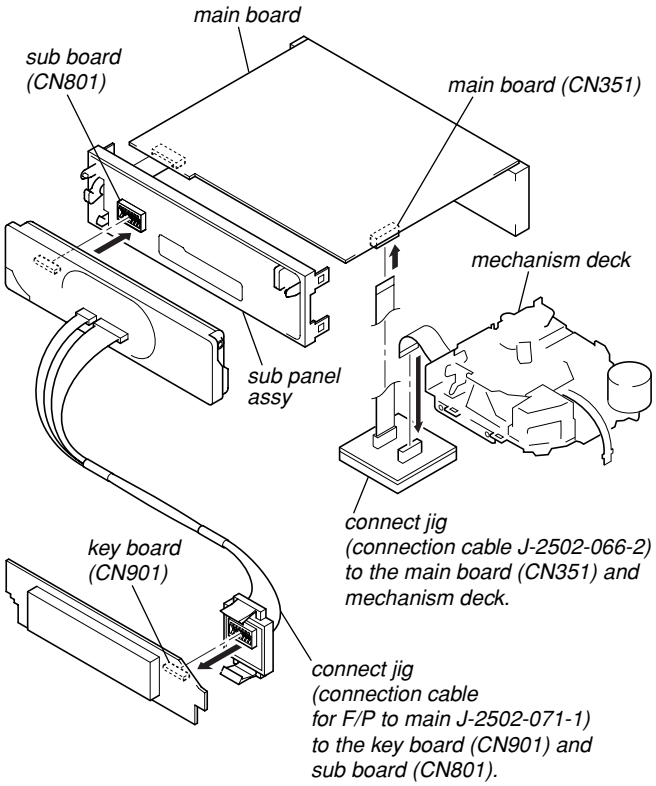
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SERVICING NOTES

SERVICE POSITION

In checking the key board and main board, prepare two jigs (connection cable J-2502-066-2 and
connection cable for F/P to main J-2502-071-1).

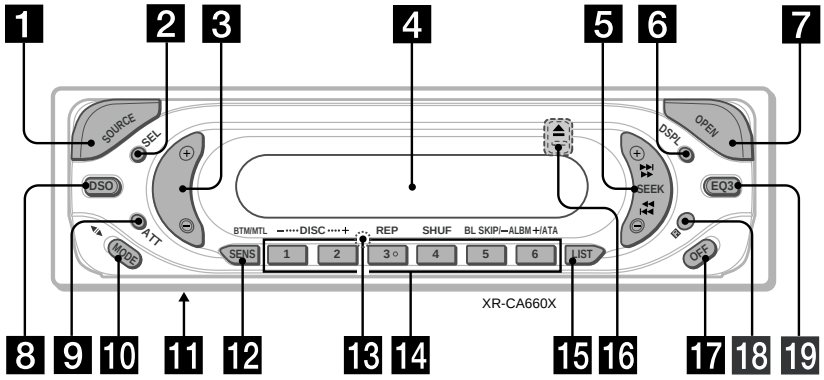

main board
sub board (CN801)
main board (CN351)
mechanism deck
sub panel assy
connect jig (connection cable J-2502-066-2) to the main board (CN351) and mechanism deck.
key board (CN901)
connect jig (connection cable for F/P to main J-2502-071-1) to the key board (CN901) and sub board (CN801).

SECTION 1
GENERAL

This section is extracted from instruction manual.

Location of controls

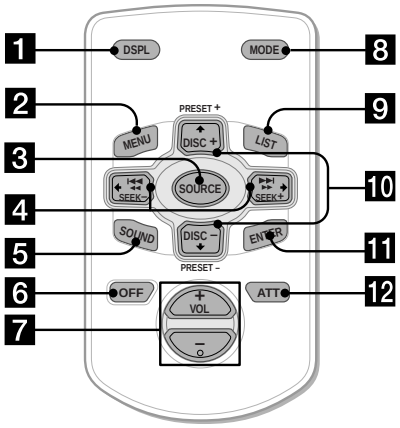
Refer to the pages listed for details.



1 SOURCE (Power on/Tape/Radio/CD/MD) button
Selecting the source
2 SEL (select) button
Selecting items.
3 Volume +/– button
4 Display window
5 SEEK +/– button
Tape:
Fast-forwarding, reversing a tape Automatic Music Sensor
Radio:
Tuning in stations automatically/finding a station manually.
CD/MD:
Skipping tracks/fast-forwarding, reversing a track.
6 DSPL (display mode change) button
7 OPEN button
8 DSO button
9 ATT (attenuate) button
10 MODE (◄I►) button
Changing the operation
11 Frequency select switch (located on the bottom of the unit) (E model)
See "Frequency select switch" in the Installation/Connections manual.
12 SENS/BTM/MTL button
13 RESET button (located on the front side of the unit, behind the front panel)
14 Number buttons
Tape:
③: **REP**
⑤: **BL SKIP**
⑥: **ATA**
Radio:
Storing the desired station on each number button.
CD (MP3 files)/MD:
①: **DISC –**
②: **DISC +**
③: **REP**
④: **SHUF**
MP3 files:
⑤: **ALBM –**
⑥: **ALBM +**
15 LIST button
16 ⏏ (eject) button (located on the front side of the unit, behind the front panel)
17 OFF (Stop/Power off) button*
18 Receptor for the card remote commander
19 EQ3 button

* **Warning when installing in a car without an ACC (accessory) position on the ignition switch**
After turning off the ignition, be sure to press and hold (OFF) on the unit until the display disappears.
Otherwise, the display does not turn off and this causes battery drain.

Card remote commander RM-X114



The corresponding buttons of the card remote commander control the same functions as those on this unit.

1 DSPL button
2 MENU button*
3 SOURCE button
4 SEEK (+/–) buttons
5 SOUND button
6 OFF button
7 VOL (+/–) buttons
8 MODE button
9 LIST button
10 DISC/PRESET (+/–) buttons
11 ENTER button
12 ATT button

** Not available for this unit*

Note
If the display disappears by pressing (OFF), it cannot be operated with the card remote commander unless (SOURCE) on the unit is pressed, or a cassette tape is inserted to activate the unit first.

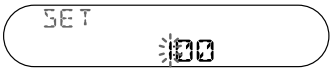
Tip
Refer to "Replacing the lithium battery" for details on how to replace the batteries (page 21).

Setting the clock

The clock uses a 12-hour digital indication.

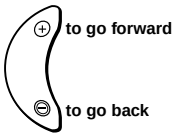
Example: To set the clock to 10:08

1 Press (DSPL) for 2 seconds.

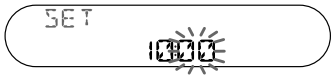


The hour indication flashes.

❶ Press the volume +/– button to set the hour.

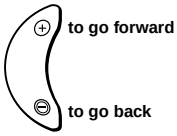


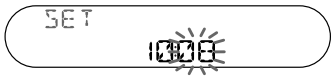
❷ Press (SEL).



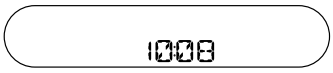
The minute indication flashes.

❸ Press the volume +/– button to set the minute.



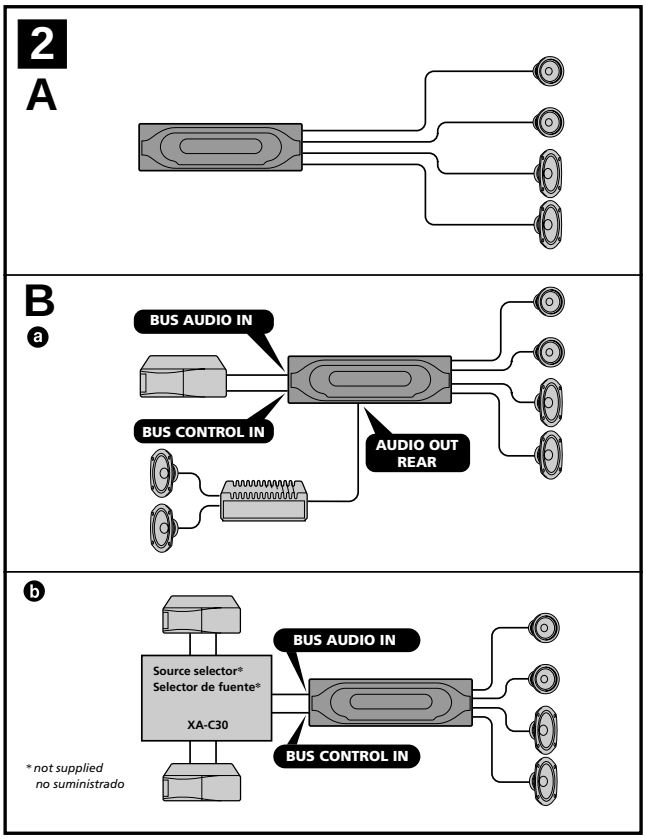


2 Press (DSPL).



The clock starts.

After the clock setting is completed, the display returns to normal play mode.



Cautions

- This unit is designed for negative earth 12 V DC operation only.
- Do not get the wires under a screw, or caught in moving parts (e.g. seat railing).
- Before making connections, turn the car ignition off to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- **Run all earth wires to a common earth point.**
- Be sure to insulate any loose unconnected wires with electrical tape for safety.

Notes on the power supply cord (yellow)

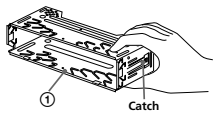
- When connecting this unit in combination with other stereo components, the connected car circuit's rating must be higher than the sum of each component's fuse.
- When no car circuits are rated high enough, connect the unit directly to the battery.

Parts list (1)

- The numbers in the list are keyed to those in the instructions.
- The bracket ① and the protection collar ⑤ are attached to the unit before shipping. Before mounting the unit, use the release keys ⑦ to remove the bracket ① and the protection collar ⑤ from the unit. For details, see "Removing the protection collar and the bracket (4)" on the reverse side of the sheet.
- **Keep the release keys ⑦ for future use as they are also necessary if you remove the unit from your car.**

Caution

Handle the bracket ① carefully to avoid injuring your fingers.



Note

Before installing, make sure that the catches on both sides of the bracket ① are bent inwards 2 mm. If the catches are straight or bent outwards, the unit will not be installed securely and may spring out.

Connection example (2)

***Notes* (2-B-❸)**

- *Be sure to connect the earth cord before connecting the amplifier.*
- *If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.*

***Tip* (2-B-ⓑ)**

For connecting two or more CD/MD changers, the source selector XA-C30 (optional) is necessary.

Connection diagram (3)

❶ **To a metal surface of the car**
First connect the black earth lead, then connect the yellow and red power input leads.

❷ **To the power aerial control lead or power supply lead of aerial booster amplifier**
Notes
- *It is not necessary to connect this lead if there is no power aerial or aerial booster, or with a manually-operated telescopic aerial.*
- *When your car has a built-in FM/AM aerial in the rear/side glass, see "Notes on the control and power supply leads."*

❸ **To AMP REMOTE IN of an optional power amplifier**
This connection is only for amplifiers. Connecting any other system may damage the unit.

❹ **To the interface cable of a car telephone**

❺ **To the +12 V power terminal which is energised in the accessory position of the ignition key switch**
Notes
- *If there is no accessory position, connect to the +12 V power (battery) terminal which is energised at all times.*
  Be sure to connect the black earth lead to a metal surface of the car first.
- *When your car has a built-in FM/AM aerial in the rear/side glass, see "Notes on the control and power supply leads."*

❻ **To the +12 V power terminal which is energised at all times**
Be sure to connect the black earth lead to a metal surface of the car first.

Notes on the control and power supply leads

- *The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *When your car has built-in FM/AM aerial in the rear/side glass, connect the power aerial control lead (blue) or the accessory power input lead (red) to the power terminal of the existing aerial booster. For details, consult your dealer.*
- *A power aerial without relay box cannot be used with this unit.*

Memory hold connection

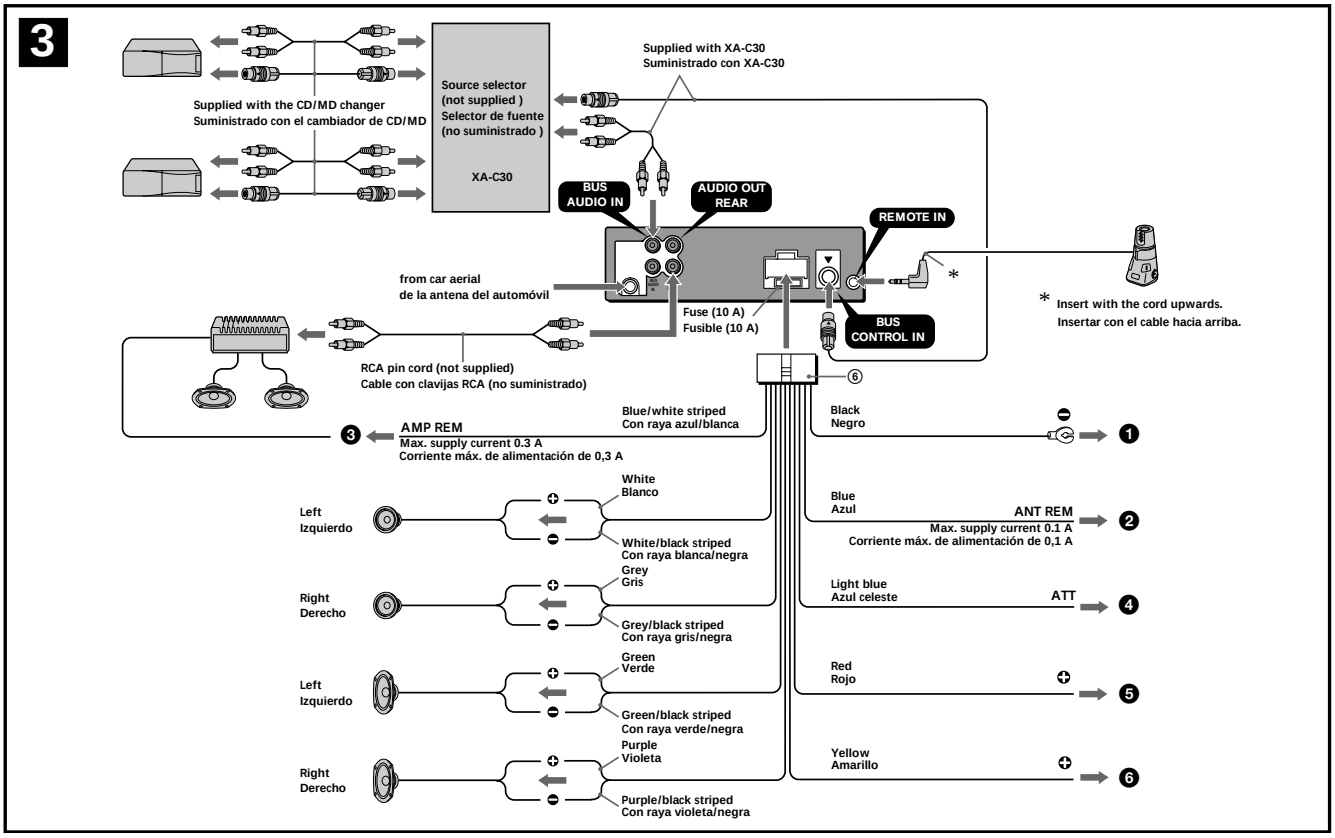
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

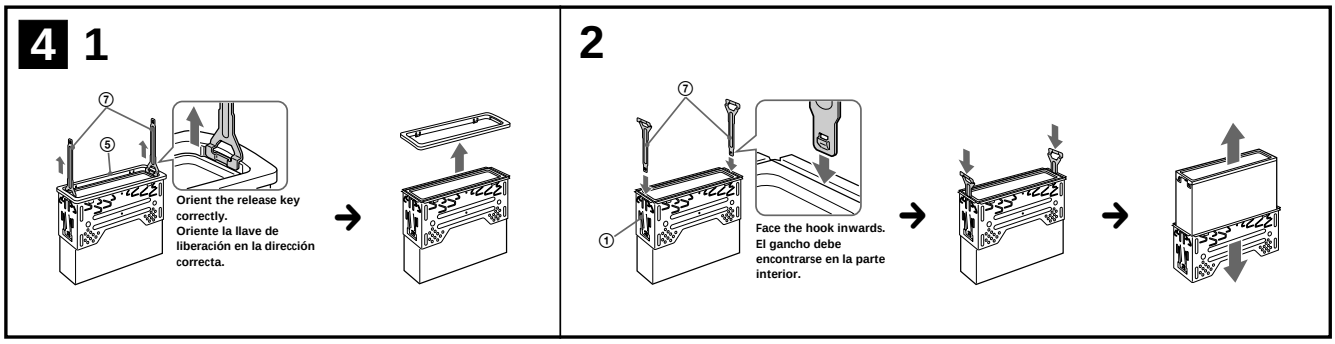
Notes on speaker connection

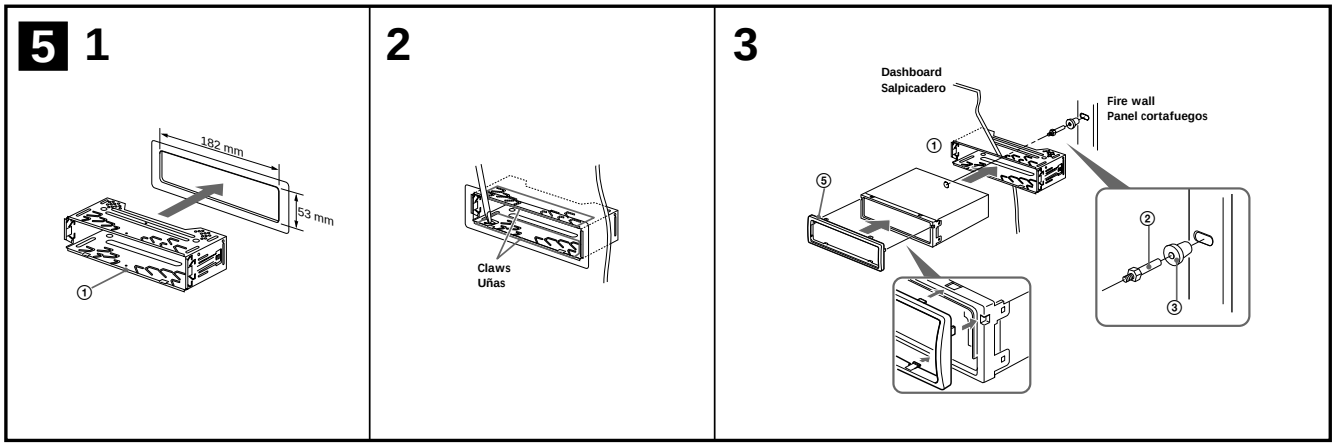
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid its damage.*
- *Do not connect the speaker terminals to the car chassis, or connect the terminals of the right speakers with those of the left speaker.*
- *Do not connect the earth lead of this unit to the negative (–) terminal of the speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminals may damage the unit.*
- *To avoid a malfunction, do not use the built-in speaker wires installed in your car if the unit shares a common negative (–) lead for the right and left speakers.*
- *Do not connect the unit's speaker cords to each other.*

Note on connection

If speaker and amplifier are not connected correctly, "FAILURE" appears in the display. In this case, make sure the speaker and amplifier are connected correctly.




4 1
Orient the release key correctly.
Oriente la llave de liberación en la dirección correcta.
2
Face the hook inwards.
El gancho debe encontrarse en la parte interior.



Precautions

- Choose the installation location carefully so that the unit will not interfere with normal driving operations.
- Avoid installing the unit in areas subject to dust, dirt, excessive vibration, or high temperatures, such as in direct sunlight or near heater ducts.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

Removing the protection collar and the bracket (4)

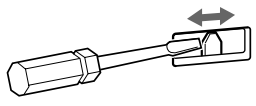
Before installing the unit, remove the protection collar ⑤ and the bracket ① from the unit.

1 Remove the protection collar ⑤.
❶ Engage the release keys ⑦ together with the protection collar ⑤.
❷ Pull out the release keys ⑦ to remove the protection collar ⑤.

2 Remove the bracket ①.
❶ Insert both release keys ⑦ together between the unit and the bracket ① until they click.
❷ Pull down the bracket ①, then pull up the unit to separate.

Frequency select switch (E model)

The AM (FM) tuning interval is factory-set to the 9 k (50 k) position. If the frequency allocation system of your country is based on 10 kHz (200 kHz) interval, set the switch on the bottom of the unit to the 10 k (200 k) position before making connections.



Mounting example (5)

Installation in the dashboard

Notes
- *Bend these Claws outwards for a tight fit, if necessary.* (**5**-2)
- *Make sure that the 4 catches on the protection collar ⑤ are properly engaged in the slots of the unit.* (**5**-3)

Mounting the unit in a Japanese car (6)

You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.

Note

To prevent malfunction, install only with the supplied screws ④.

How to detach and attach the front panel (7)

Before installing the unit, detach the front panel.

7-A To detach

Before detaching the front panel, be sure to press (OFF). Press (OPEN), then slide the front panel to the right side, and pull out the left side.

7-B To attach

Place the hole Ⓐ in the front panel onto the spindle Ⓑ on the unit as illustrated, then push the left side in.

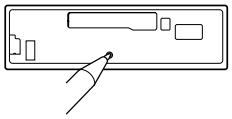
Warning when installing in a car without ACC (accessory) position on the ignition key switch

After turning off the ignition, be sure to press and hold (OFF) on the unit until the display disappears.

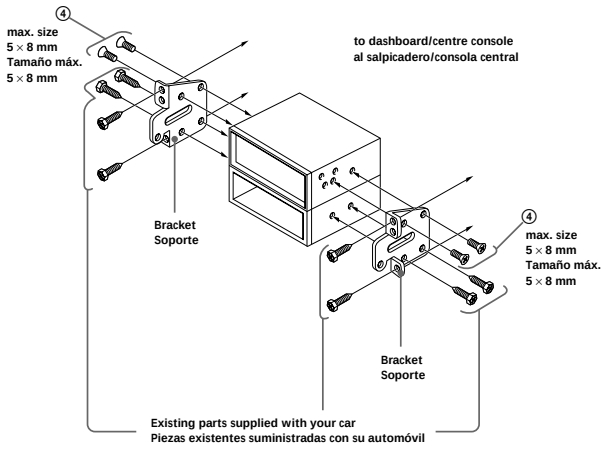
Otherwise, the display does not turn off and this causes battery drain.

RESET button

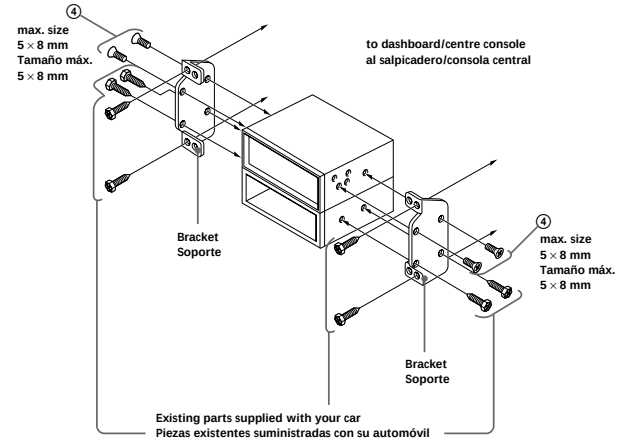
When the installation and connections are completed, be sure to press the RESET button with a ballpoint pen, etc., after detaching the front panel.



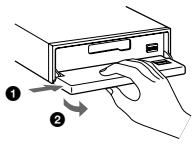
6 A TOYOTA



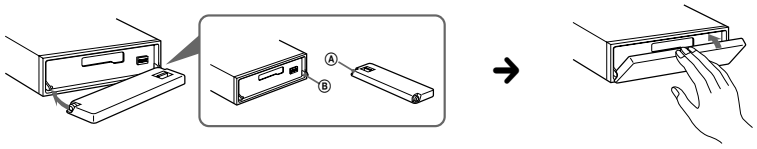
B NISSAN



7 A



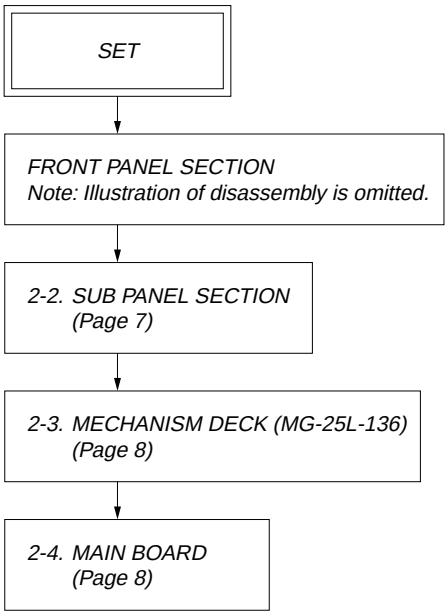
B



SECTION 2
DISASSEMBLY

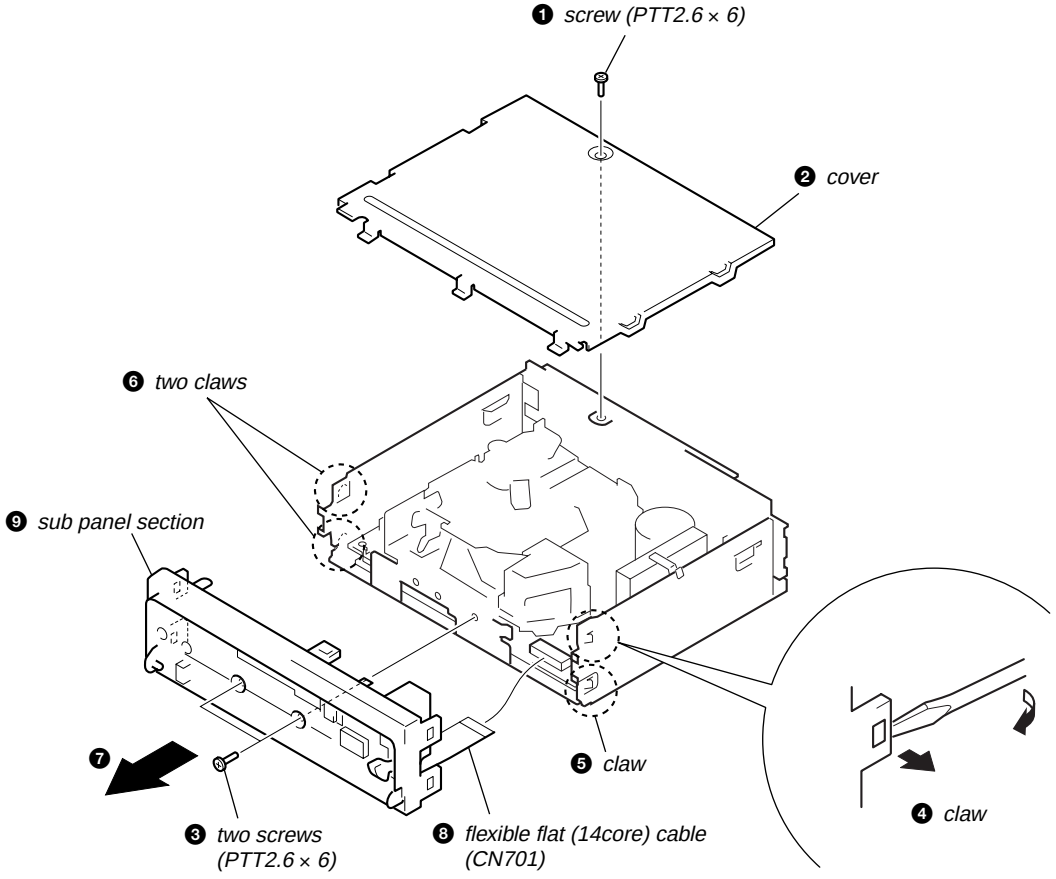
• This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

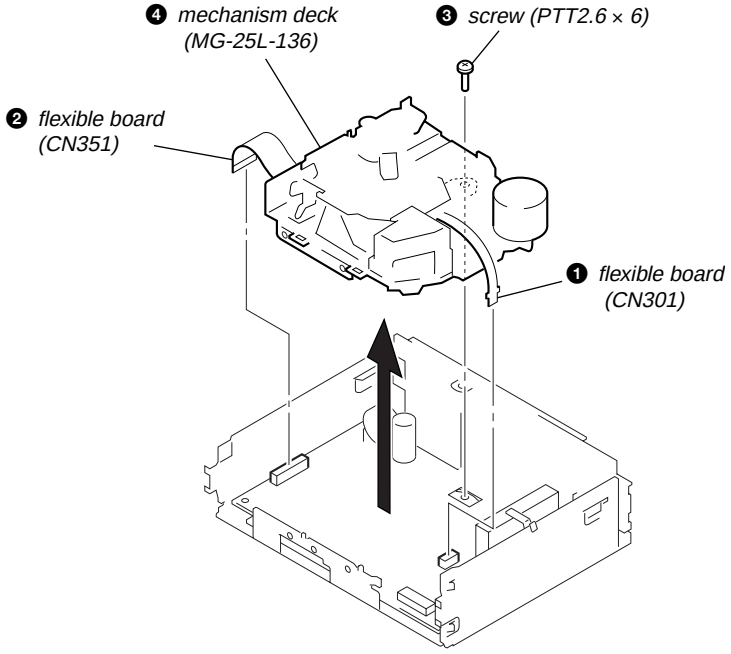


Note: Follow the disassembly procedure in the numerical order given.

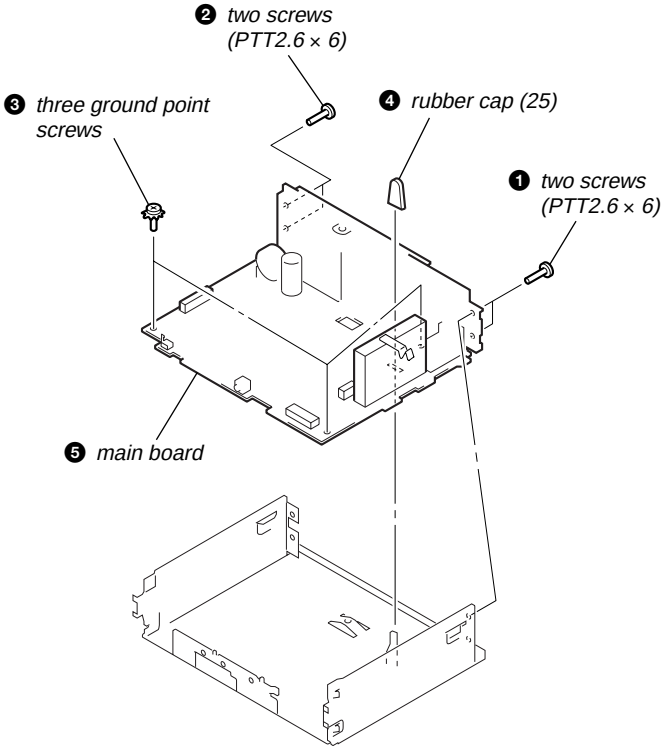
2-2. SUB PANEL SECTION



2-3. MECHANISM DECK (MG-25L-136)



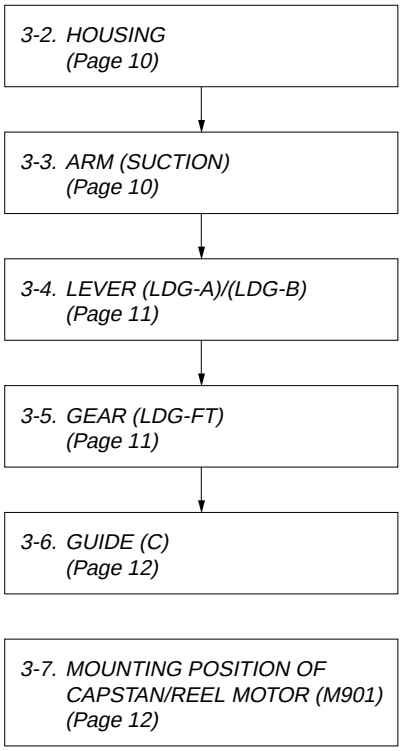
2-4. MAIN BOARD



SECTION 3
ASSEMBLY

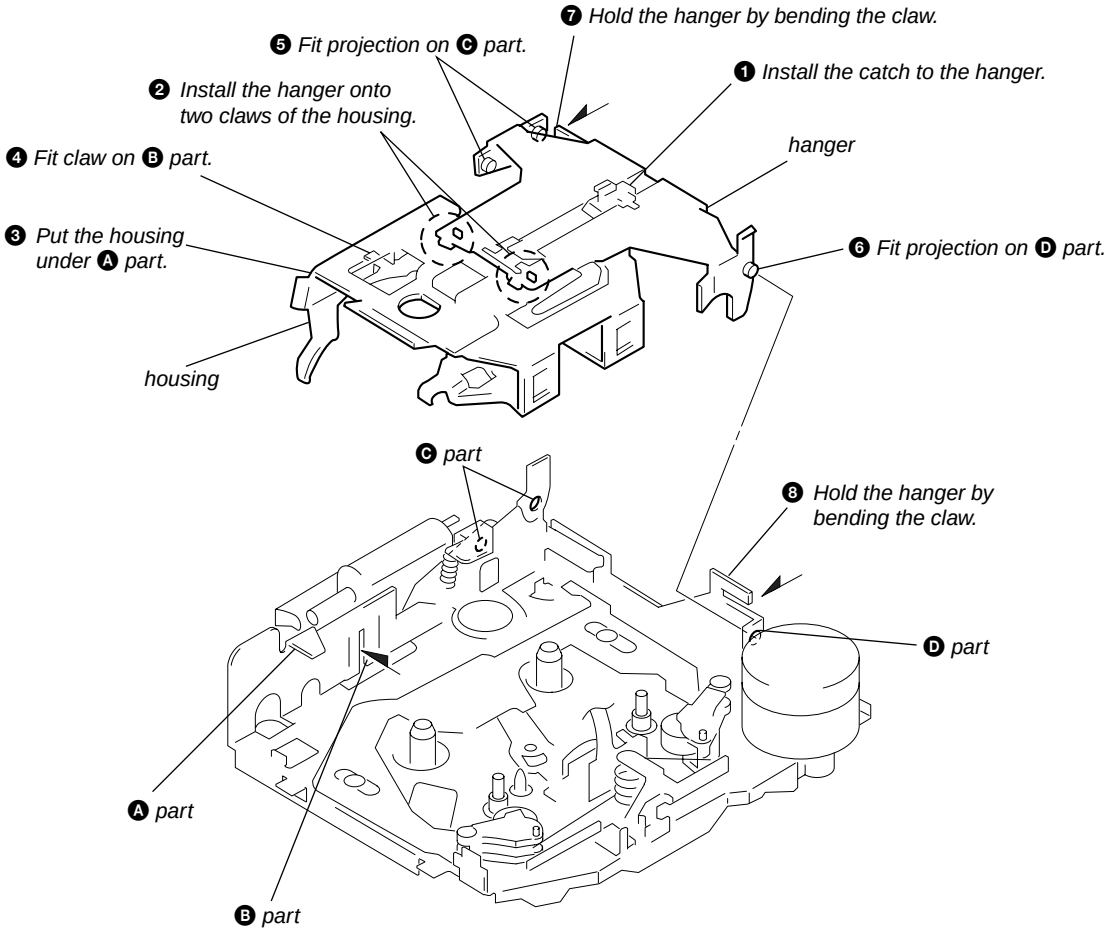
• This set can be assembled in the order shown below.

3-1. ASSEMBLY FLOW

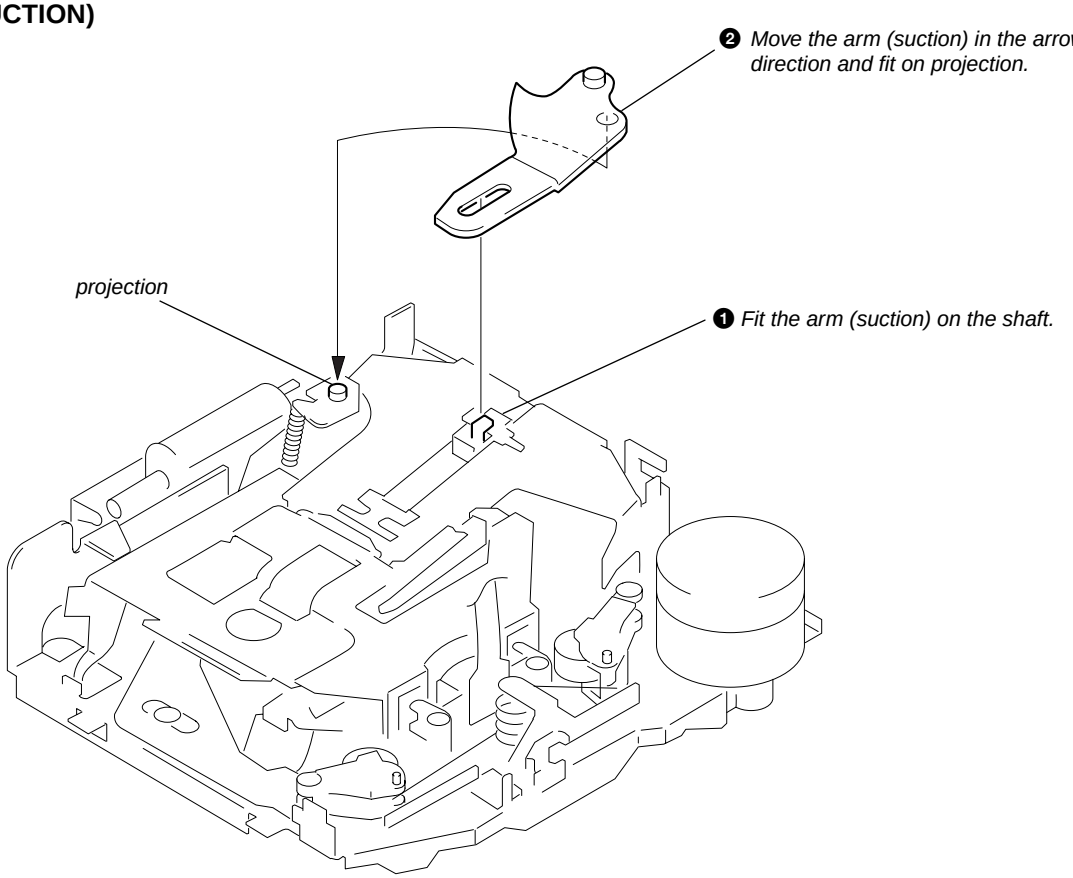


Note: Follow the assembly procedure in the numerical order given.

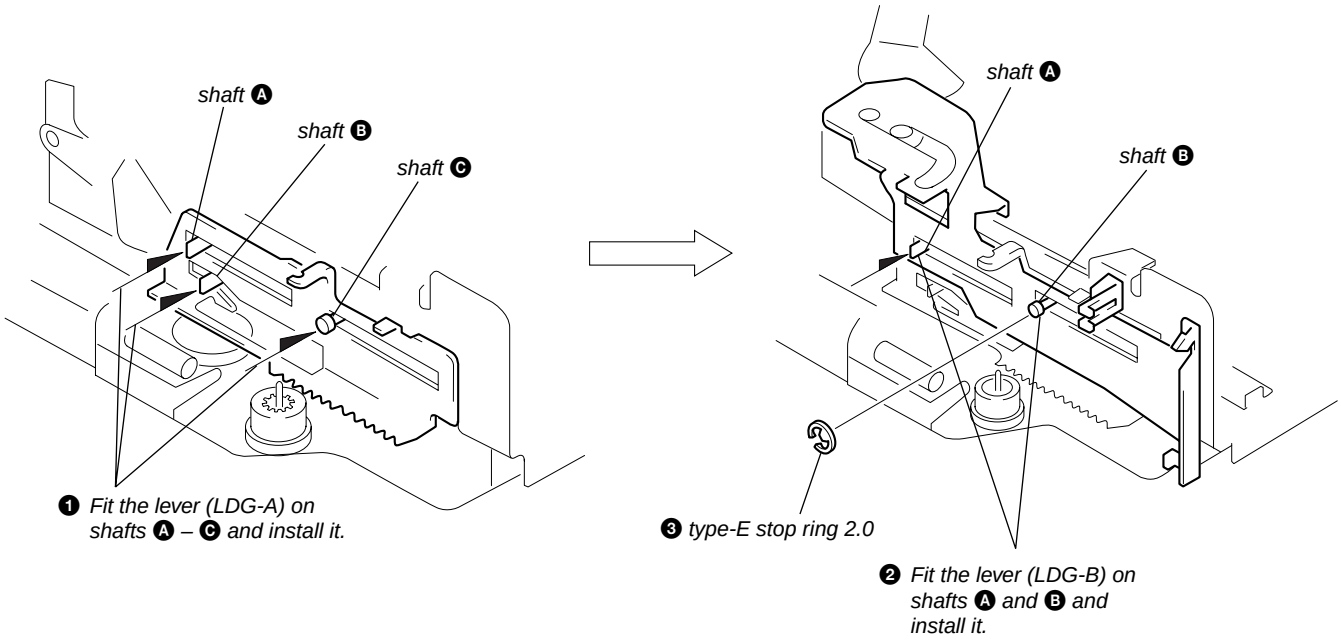
3-2. HOUSING


❼ Hold the hanger by bending the claw.
❺ Fit projection on Ⓒ part.
❶ Install the catch to the hanger.
❷ Install the hanger onto two claws of the housing.
hanger
❹ Fit claw on Ⓑ part.
❸ Put the housing under Ⓐ part.
❻ Fit projection on Ⓓ part.
housing
Ⓒ part
❽ Hold the hanger by bending the claw.
Ⓓ part
Ⓐ part
Ⓑ part

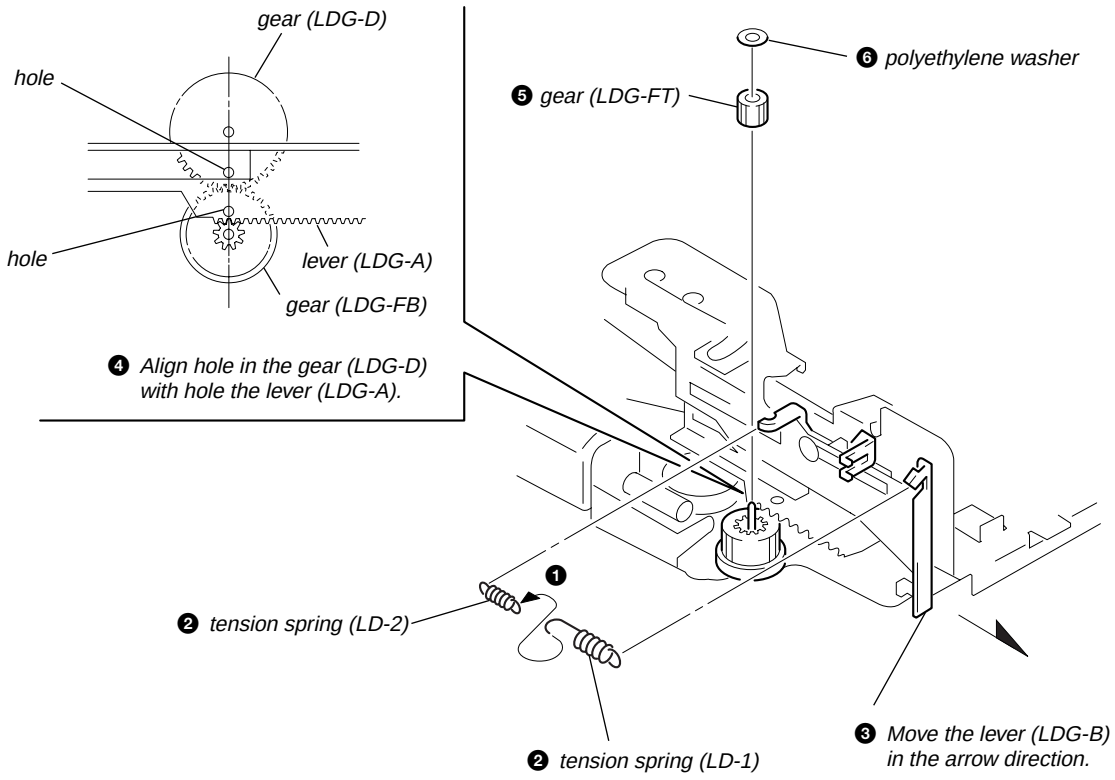
3-3. ARM (SUCTION)



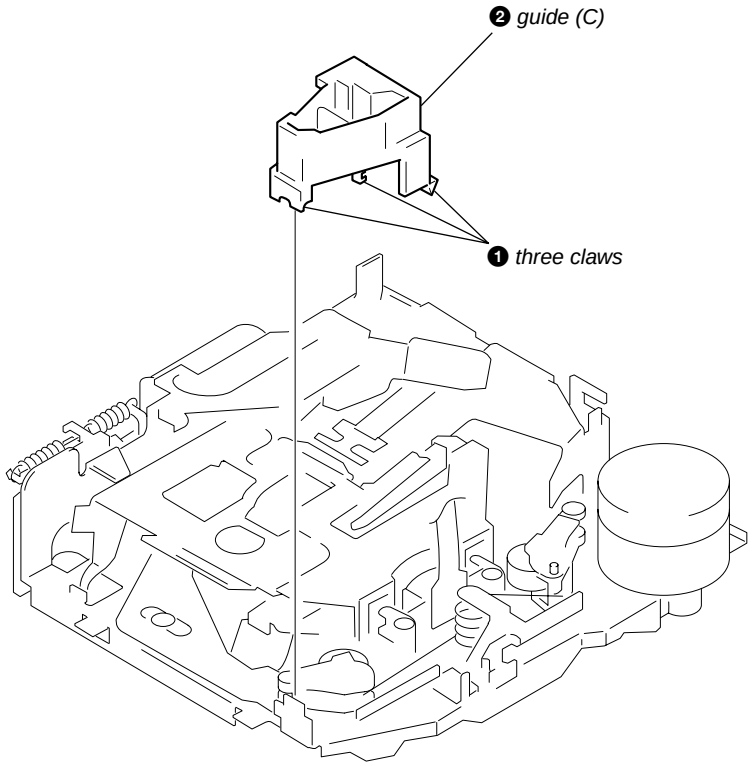
3-4. LEVER (LDG-A) / (LDG-B)


shaft Ⓐ
shaft Ⓑ
shaft Ⓒ
❶ Fit the lever (LDG-A) on shafts Ⓐ – Ⓒ and install it.
shaft Ⓐ
shaft Ⓑ
❸ type-E stop ring 2.0
❷ Fit the lever (LDG-B) on shafts Ⓐ and Ⓑ and install it.

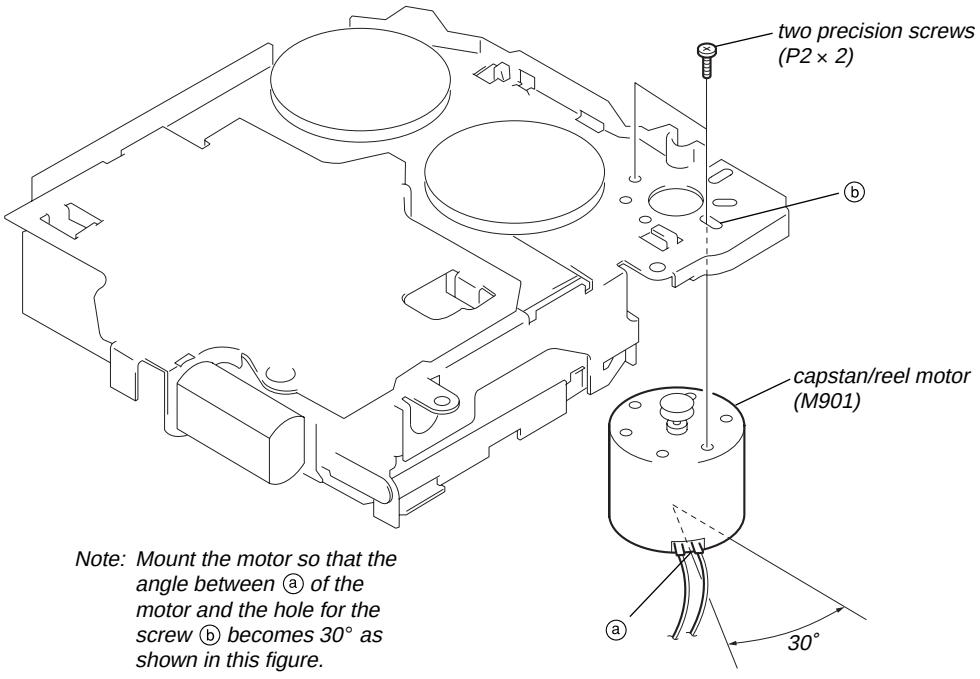
3-5. GEAR (LDG-FT)



3-6. GUIDE (C)



3-7. MOUNTING POSITION OF CAPSTAN/REEL MOTOR (M901)



Note: Mount the motor so that the angle between ⓐ of the motor and the hole for the screw ⓑ becomes 30° as shown in this figure.

SECTION 4
MECHANICAL ADJUSTMENTS

1. Clean the following parts with a denatured-alcohol-moistened swab:
   playback head pinch roller
   rubber belt capstan
   idler
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the power supply voltage (14.4 V) unless otherwise noted.

TORQUE MEASUREMENT

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	2.95 – 6.37 mN•m (30 – 65 g•cm) (0.42 – 0.90 oz•inch)
Forward Back Tension	CQ-102C	0.05 – 0.44 mN•m (0.5 – 4.5g•cm) (0.01 – 0.06 oz•inch)
Reverse	CQ-102RC	2.95 – 6.37 mN•m (30 – 65 g•cm) (0.42 – 0.90 oz•inch)
Reverse Back Tension	CQ-102RC	0.05 – 0.44 mN•m (0.5 – 4.5g•cm) (0.01 – 0.06 oz•inch)
FF, REW	CQ-201B	5.89 – 19.61 mN•m (60 – 200 g•cm) (0.83 – 2.78 oz•inch)

TAPE TENSION MEASUREMENT

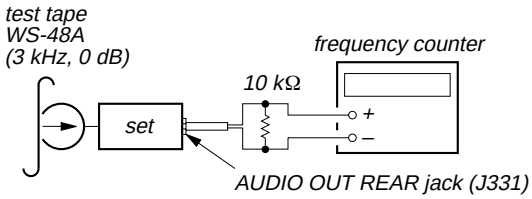
Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 60 g (more than 2.12 oz)
Reverse	CQ-403R	more than 60 g (more than 2.12 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

TAPE DECK SECTION | 0 dB=0.775 V

TAPE SPEED ADJUSTMENT

Setting:



Procedure:

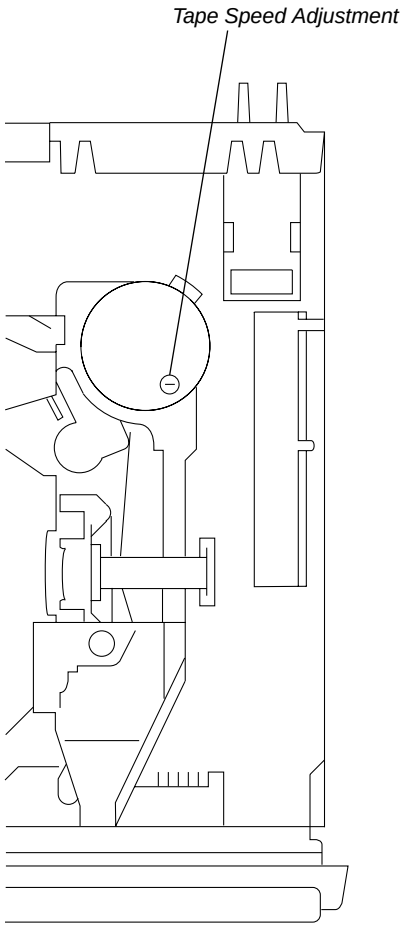
1. Put the set into the FWD PB mode.
2. Adjust adjustment resistor for inside capstan motor so that the reading on the frequency counter becomes 3,000 Hz.

Specification: Constant speed

Frequency counter
2,955 to 3,075 Hz

Adjustment Location:

– SET UPPER VIEW –



TUNER SECTION

Tuner section adjustments are done automatically in this set.

SECTION 6
DIAGRAMS

6-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:
- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▬ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

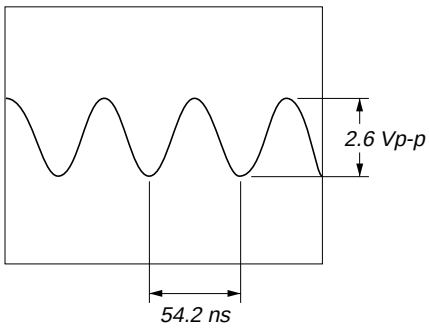
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

Note on Schematic Diagram:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  [ ] : TAPE PLAYBACK
  ∗ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM
  ⇨ : TAPE PLAYBACK
  ⇨ : BUS AUDIO IN
- Abbreviation
  EA : Saudi Arabia model

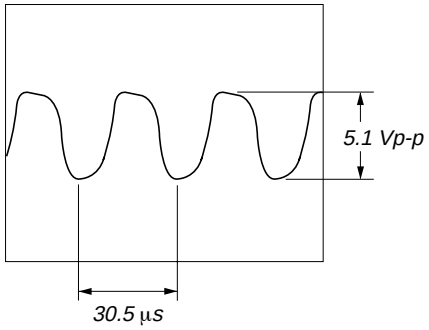
• Waveforms

– MAIN Board –

❶ IC501 ⑫ (OSC2)

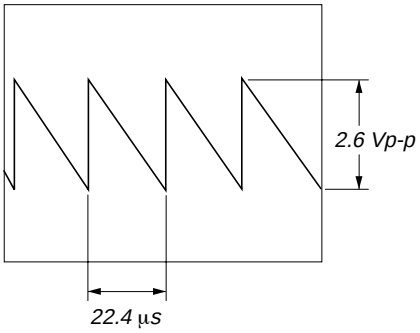


❷ IC501 ⑯ (XO)

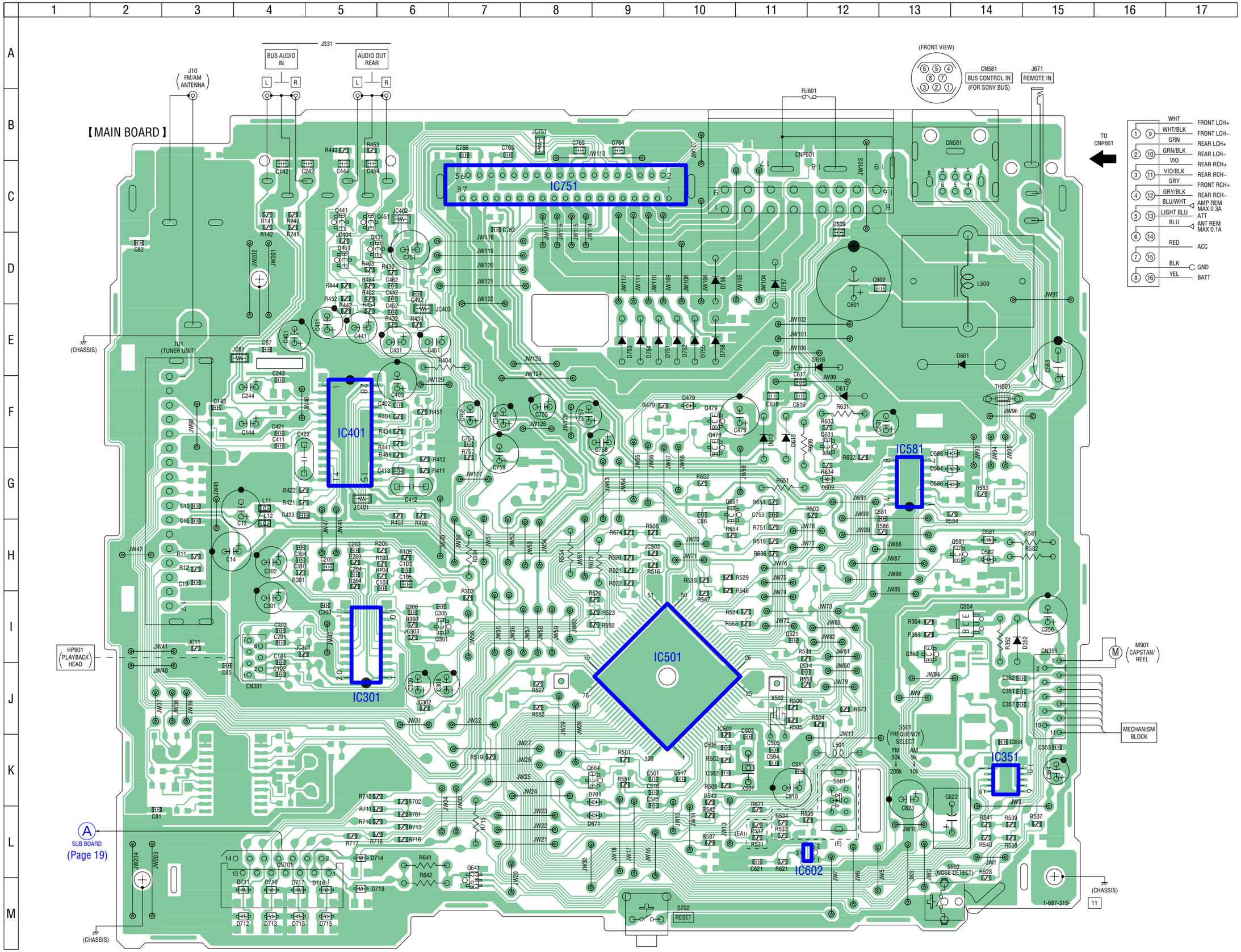


– DISPLAY Board –

❸ IC901 ⑭ (OSC)



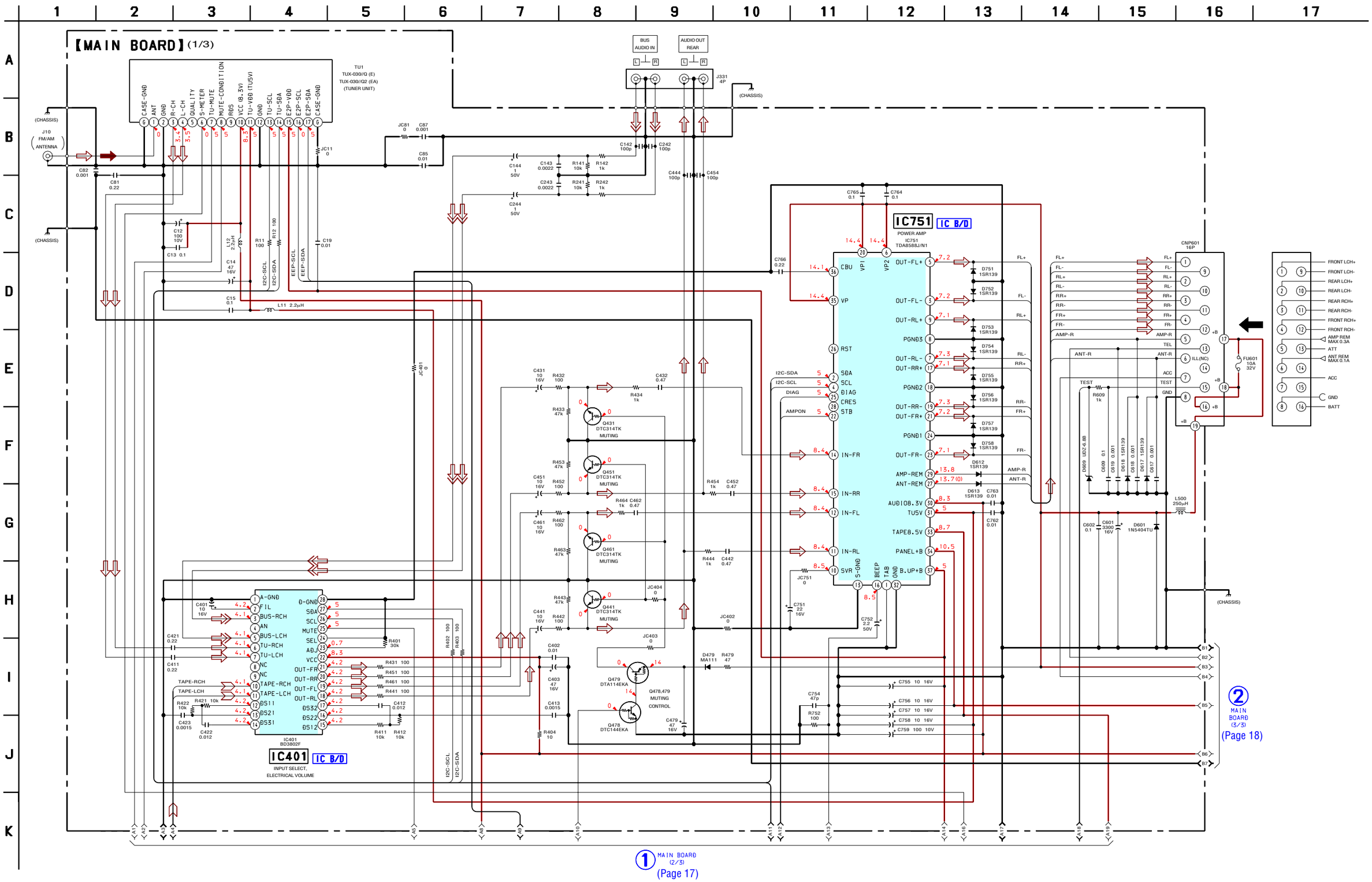
6-2. PRINTED WIRING BOARD – MAIN Board –



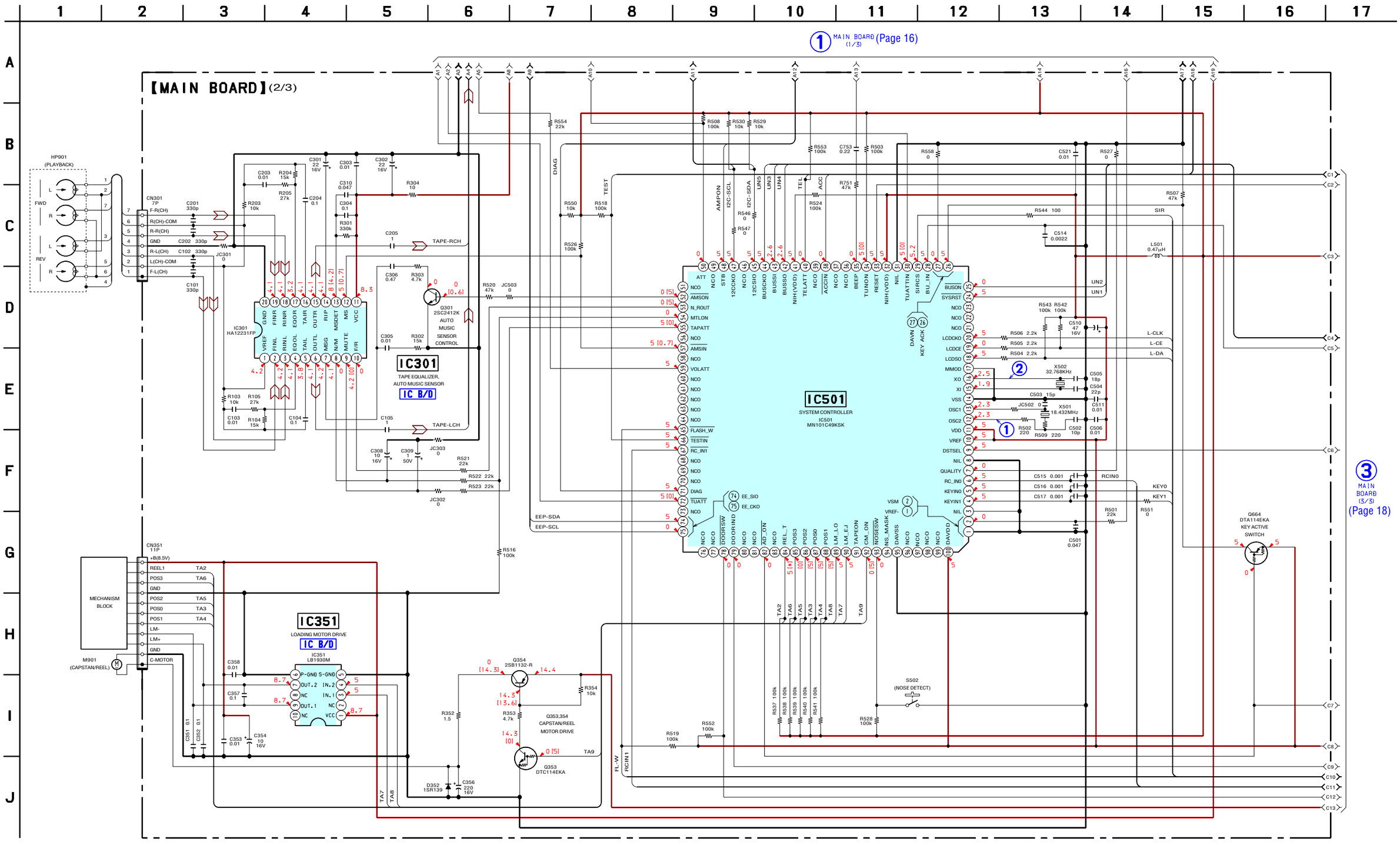
- **Semiconductor Location**

Ref. No.	Location
D352	I-14
D479	F-10
D581	H-14
D582	H-14
D584	G-14
D585	G-14
D586	G-14
D601	E-14
D609	G-12
D612	F-11
D613	F-11
D617	F-12
D618	E-12
D671	L-9
D701	K-9
D710	M-4
D711	M-4
D712	M-4
D713	M-4
D714	L-5
D715	M-5
D716	M-5
D717	M-4
D718	M-4
D719	M-5
D751	E-9
D752	E-10
D753	E-9
D754	E-9
D755	E-10
D756	D-10
D757	D-11
D758	E-10
IC301	I-5
IC351	K-14
IC401	F-5
IC501	J-9
IC581	G-13
IC602	L-11
IC751	C-8
Q301	I-6
Q353	I-13
Q354	I-14
Q431	D-6
Q441	C-5
Q451	C-5
Q461	D-5
Q478	F-10
Q479	F-10
Q581	H-14
Q631	F-12
Q641	M-7
Q651	G-10
Q664	K-9

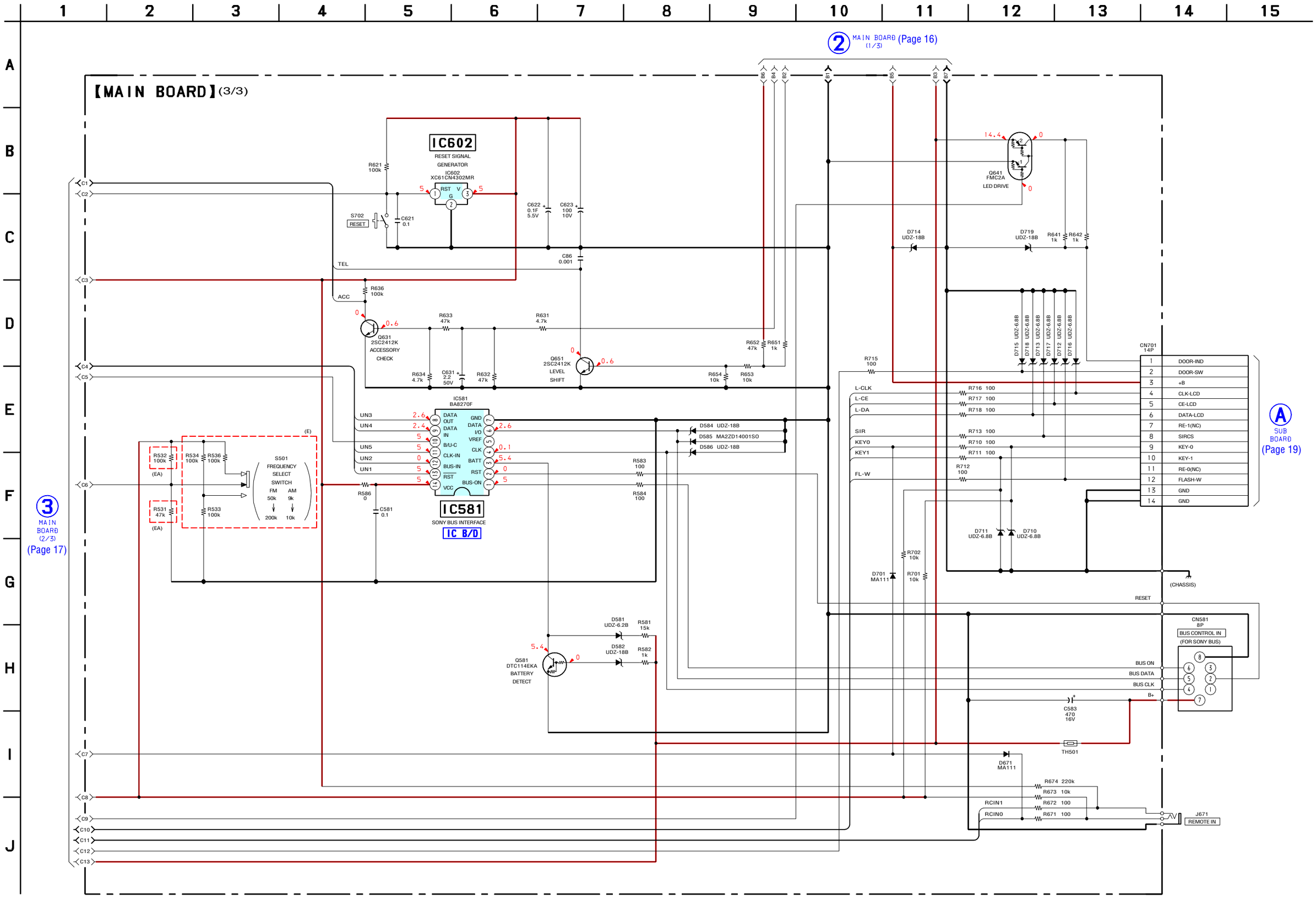
6-3. SCHEMATIC DIAGRAM – MAIN Board (1/3) – • See page 22 for IC Block Diagrams.



6-4. SCHEMATIC DIAGRAM – MAIN Board (2/3) – • See page 14 for Waveforms. • See page 22 for IC Block Diagrams.

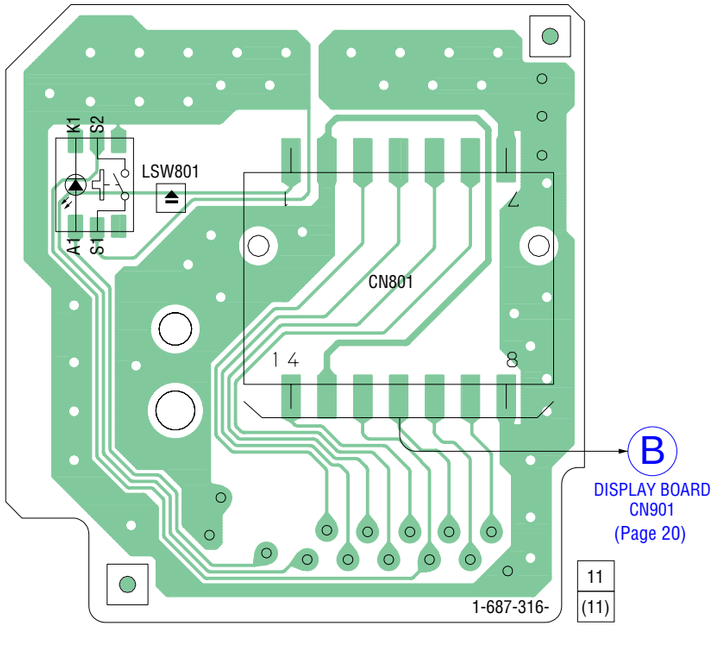


6-5. SCHEMATIC DIAGRAM – MAIN Board (3/3) – • See page 22 for IC Block Diagram.

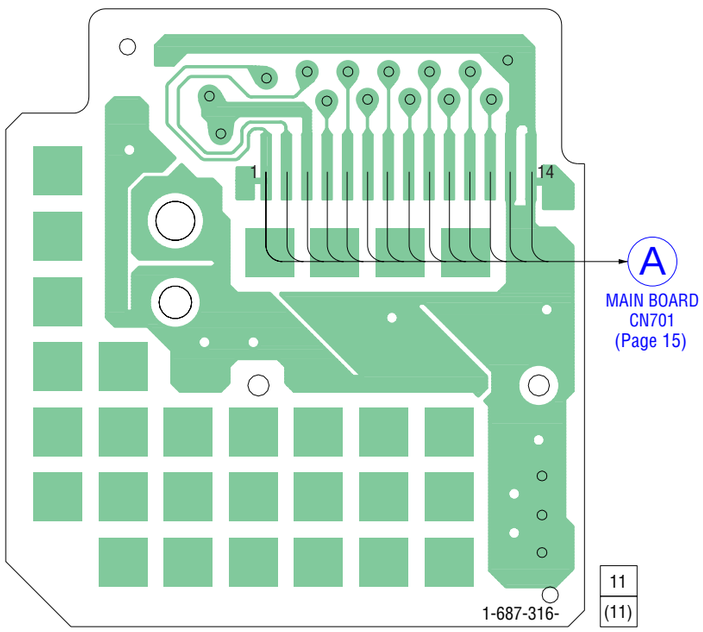


6-6. PRINTED WIRING BOARD – SUB Board –

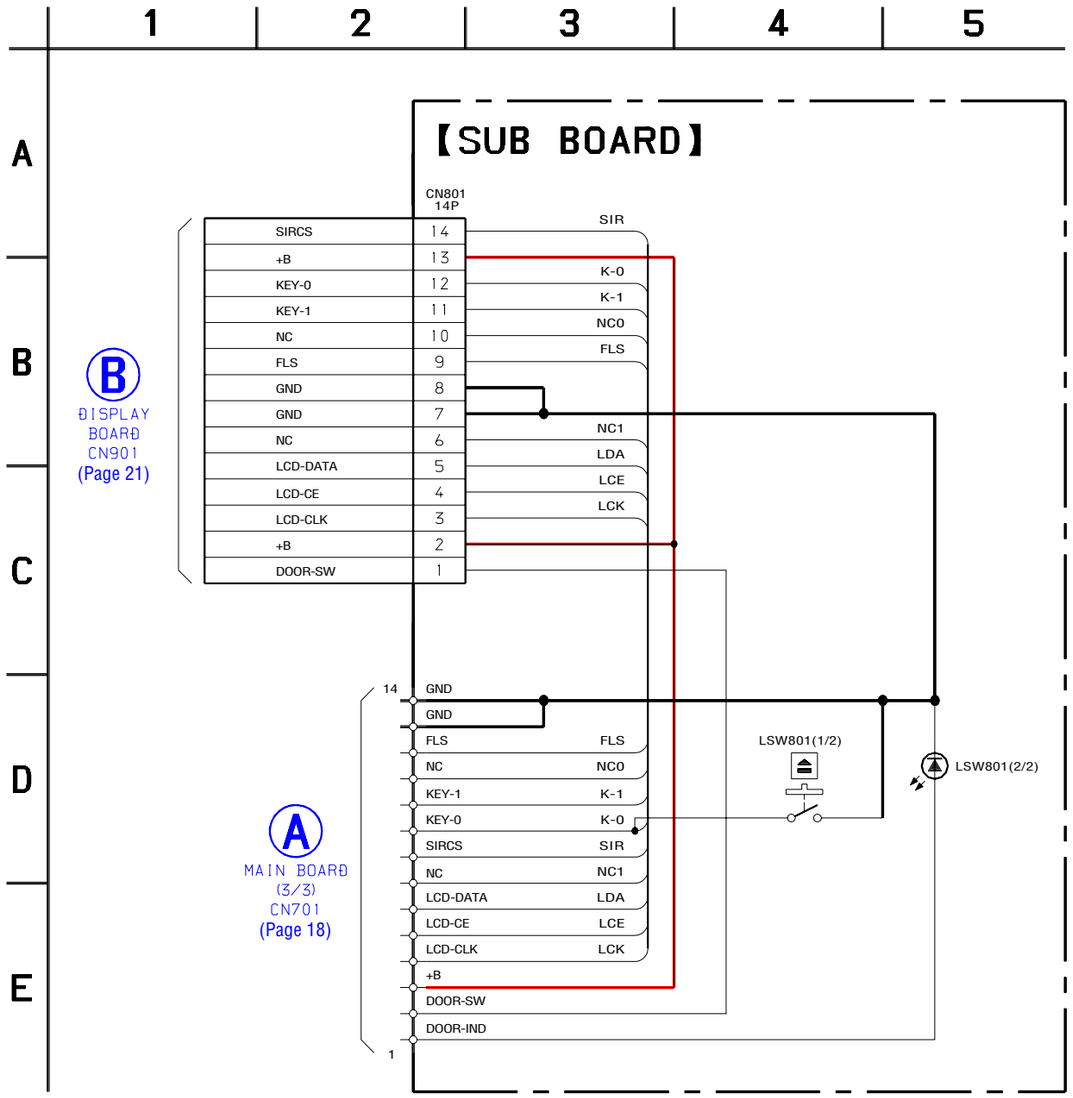
【SUB BOARD】(COMPONENT SIDE)



【SUB BOARD】(CONDUCTOR SIDE)

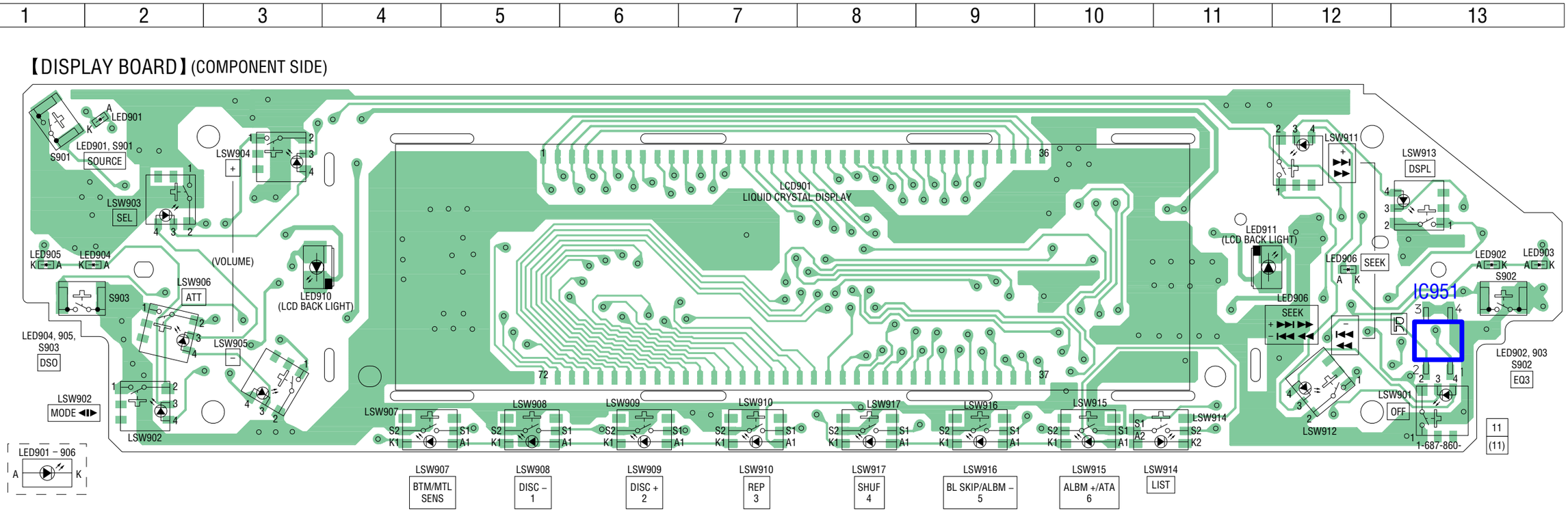


6-7. SCHEMATIC DIAGRAM – SUB Board –

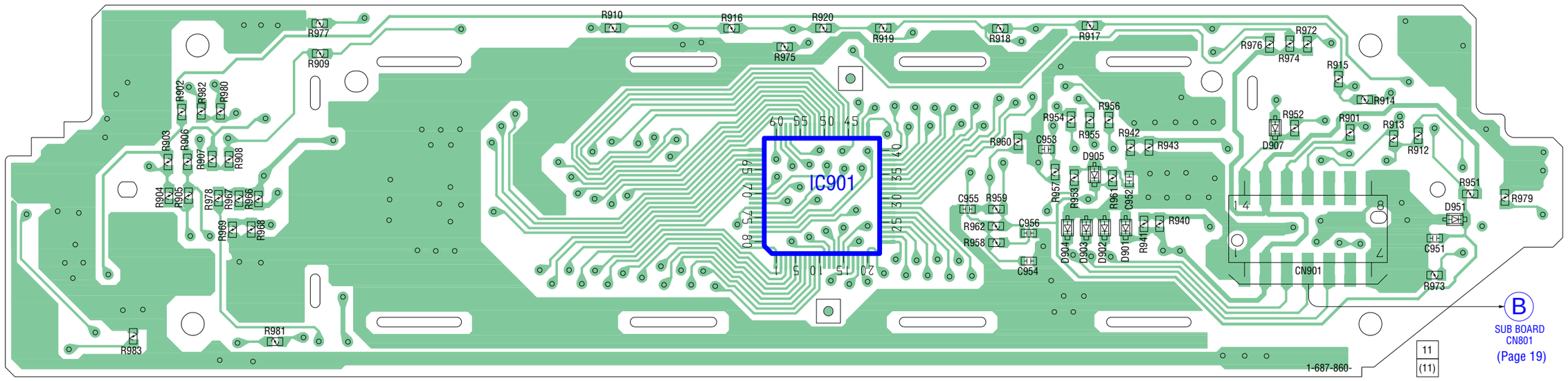


6-8. PRINTED WIRING BOARD – DISPLAY Board –

【DISPLAY BOARD】(COMPONENT SIDE)



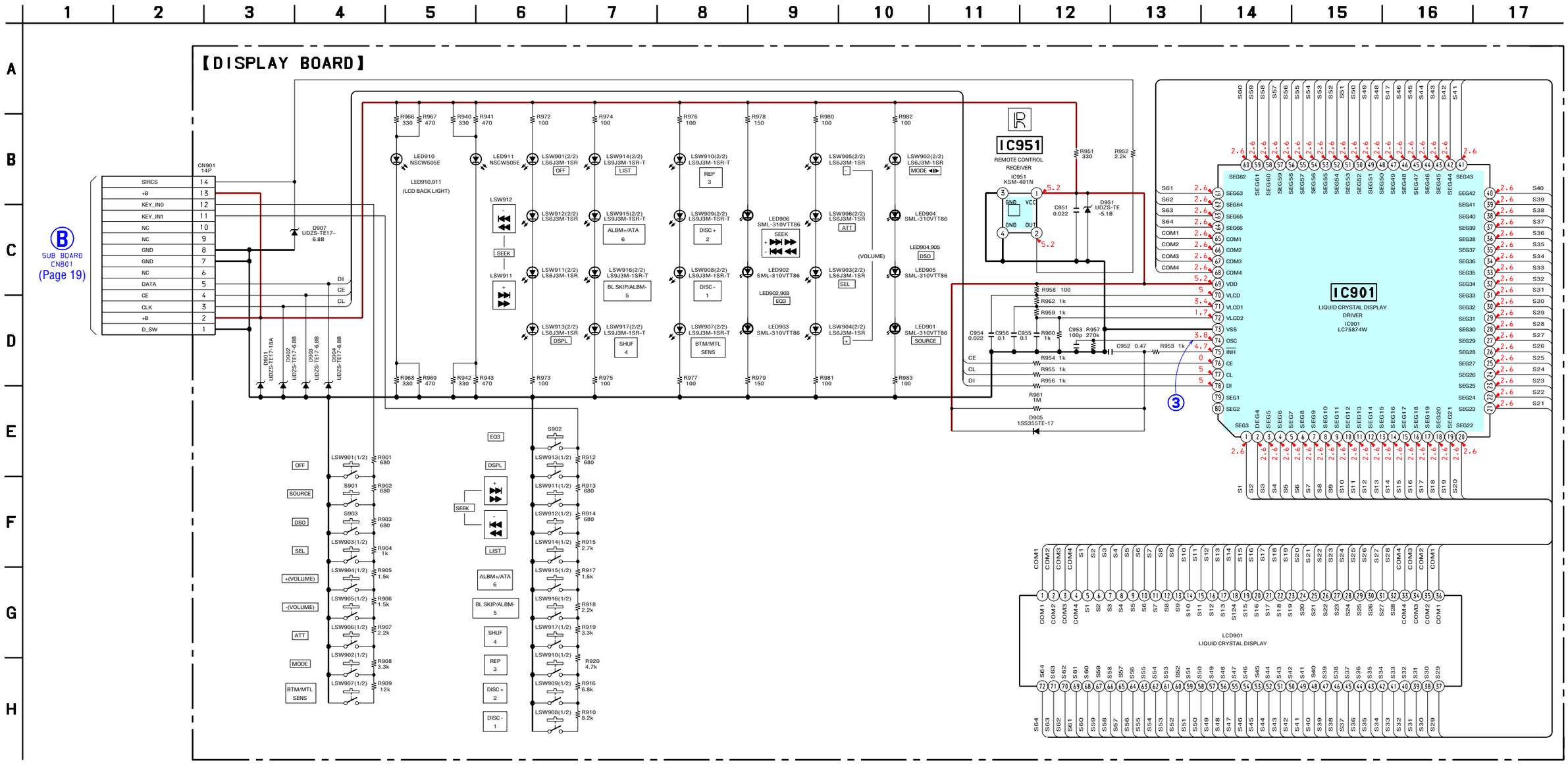
【DISPLAY BOARD】(CONDUCTOR SIDE)



- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D901	G-10			LED904	B-2
D902	G-10	IC901	F-8	LED905	B-1
D903	G-10	IC951	C-13	LED906	C-12
D904	G-10			LED910	C-3
D905	F-10	LED901	A-2	LED911	B-11
D907	F-12	LED902	B-13		
D951	G-13	LED903	B-13		

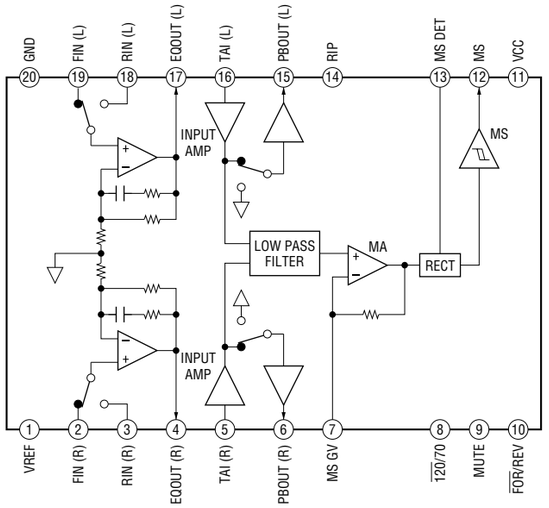
6-9. SCHEMATIC DIAGRAM – DISPLAY Board – • See page 14 for Waveform.



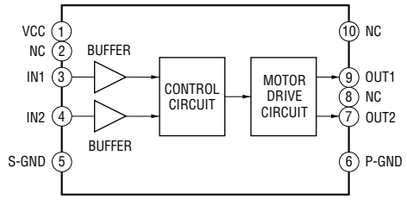
- **IC Block Diagrams**

– MAIN Board –

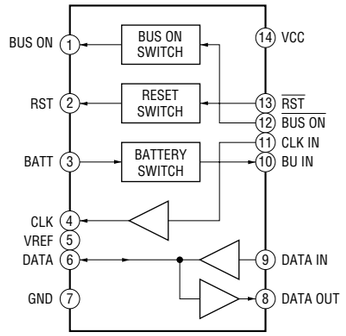
IC301 HA12231FP



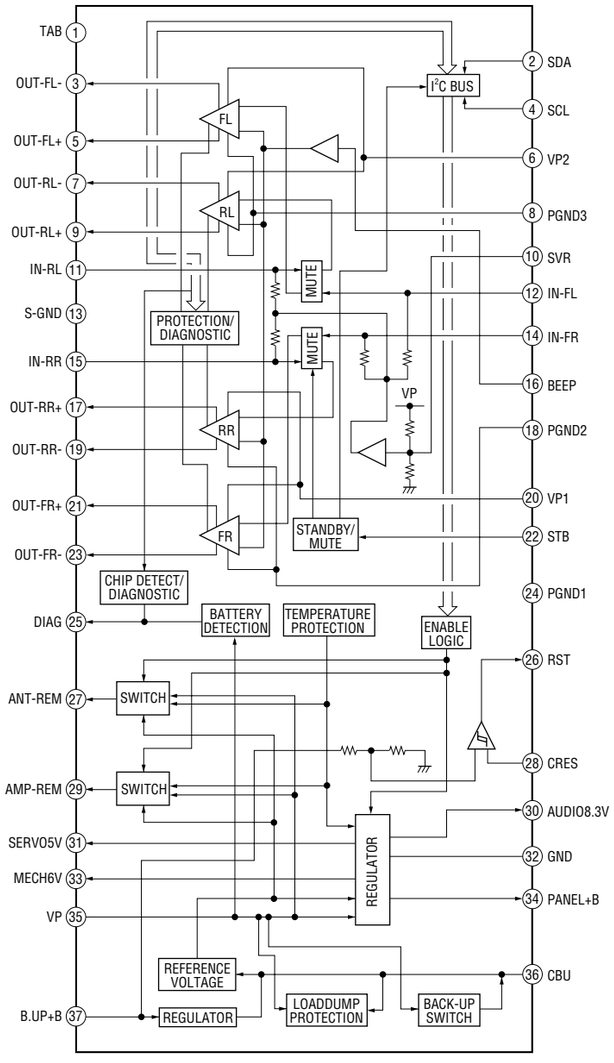
IC351 LB1930M-TLM



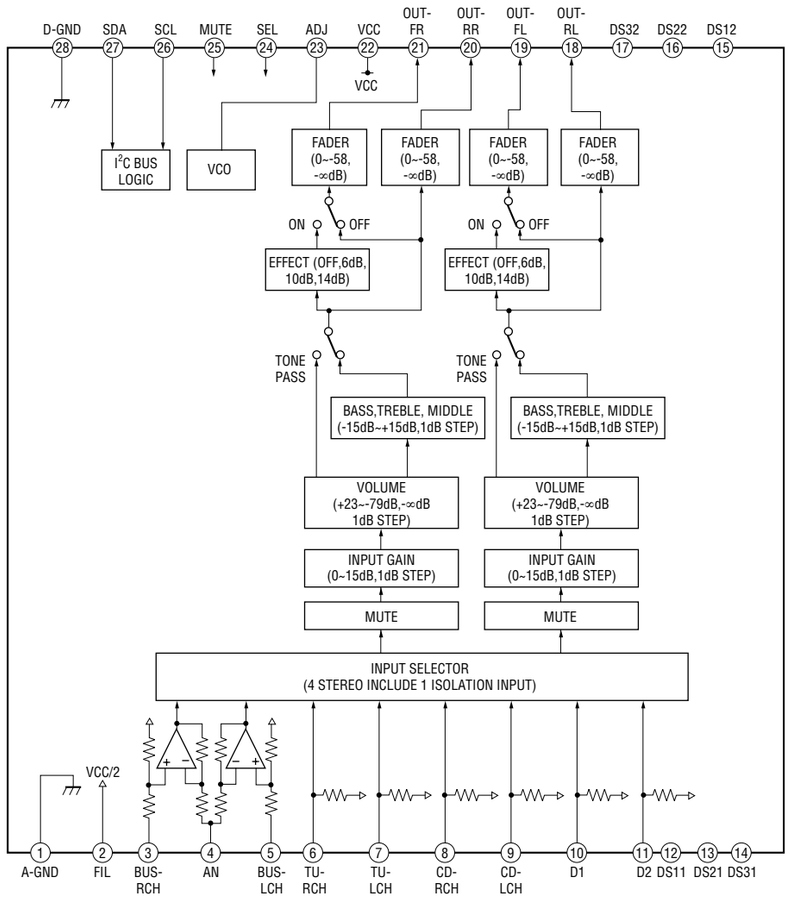
IC581 BA8270F-E2



IC751 TDA8588J/N1



IC401 BD3802F-FE2



6-10. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC501 MN101C49KSK (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	VREF–	I	Reference voltage (0V) input terminal (for A/D converter)
2	VSM	I	FM and AM signal meter voltage detection signal input from the tuner unit (A/D input)
3	NIL	I	Not used
4	KEYIN1	I	Key input terminal (A/D input)
5	KEYIN0	I	Key input terminal (A/D input)
6	RC_IN0	I	Rotary remote commander key input terminal (A/D input)
7	QUALITY	I	Not used
8	NIL	I	Not used
9	DSTSEL	I	Destination setting terminal (E model: frequency select switch, Saudi Arabia model: fixed at center voltage in this set)
10	VREF+	I	Reference voltage (+5V) input terminal (for A/D converter)
11	VDD	—	Power supply terminal (+5V)
12	OSC2	O	Main system clock output terminal (18.432 MHz)
13	OSC1	I	Main system clock input terminal (18.432 MHz)
14	VSS	—	Ground terminal
15	XI	I	Sub system clock input terminal (32.768 kHz)
16	XO	O	Sub system clock output terminal (32.768 kHz)
17	MMOD	I	Selection signal of memory mode input terminal “L”: single chip mode (fixed at “L” in this set)
18	LCDSO	O	Serial data output to the liquid crystal display driver
19	LCDCE	O	Chip enable signal output to the liquid crystal display driver “H” active
20	LCDCKO	O	Serial data transfer clock signal output to the liquid crystal display driver
21 to 23	NCO	O	Not used
24	$\overline{\text{SYSRST}}$	O	System reset signal output to the SONY bus interface “L”: reset
25	$\overline{\text{BUSON}}$	O	Bus interface control signal output to the SONY bus interface “L”: bus on
26	KEYACK	I	Input of acknowledge signal for the key entry Acknowledge signal is input to accept function and eject keys in the power off status On at input of “H”
27	DAVN	I	Not used
28	BU_IN	I	Battery detection signal input from the SONY bus interface “L” is input at low voltage
29	SIRCS	I	SIRCS remote control signal input from the remote control receiver
30	TUATT IN	I	Tuner muting on/off control signal input from the tuner unit “L”: muting on
31	NIL	I	Not used
32	VDD2	I	Power supply terminal (+5V)
33	RESET	I	System reset signal input from the reset signal generator and reset switch “L”: reset “L” is input for several 100 msec after power on, then it changes to “H”
34	TUNON	O	Tuner system power supply on/off control signal output “H”: tuner power on
35	BEEP	O	Beep sound drive signal output to the power amplifier
36, 37	NCO	O	Not used
38	$\overline{\text{ACCIN}}$	I	Accessory detection signal input “L”: accessory on
39	NCO	O	Not used
40	TELATT	I	Telephone attenuate signal input At input of “H”, the signal is attenuated by –20 dB Not used
41	NIH	I	Not used
42	BUSSO	O	Serial data output to the SONY bus interface
43	BUSSI	I	Serial data input from the SONY bus interface

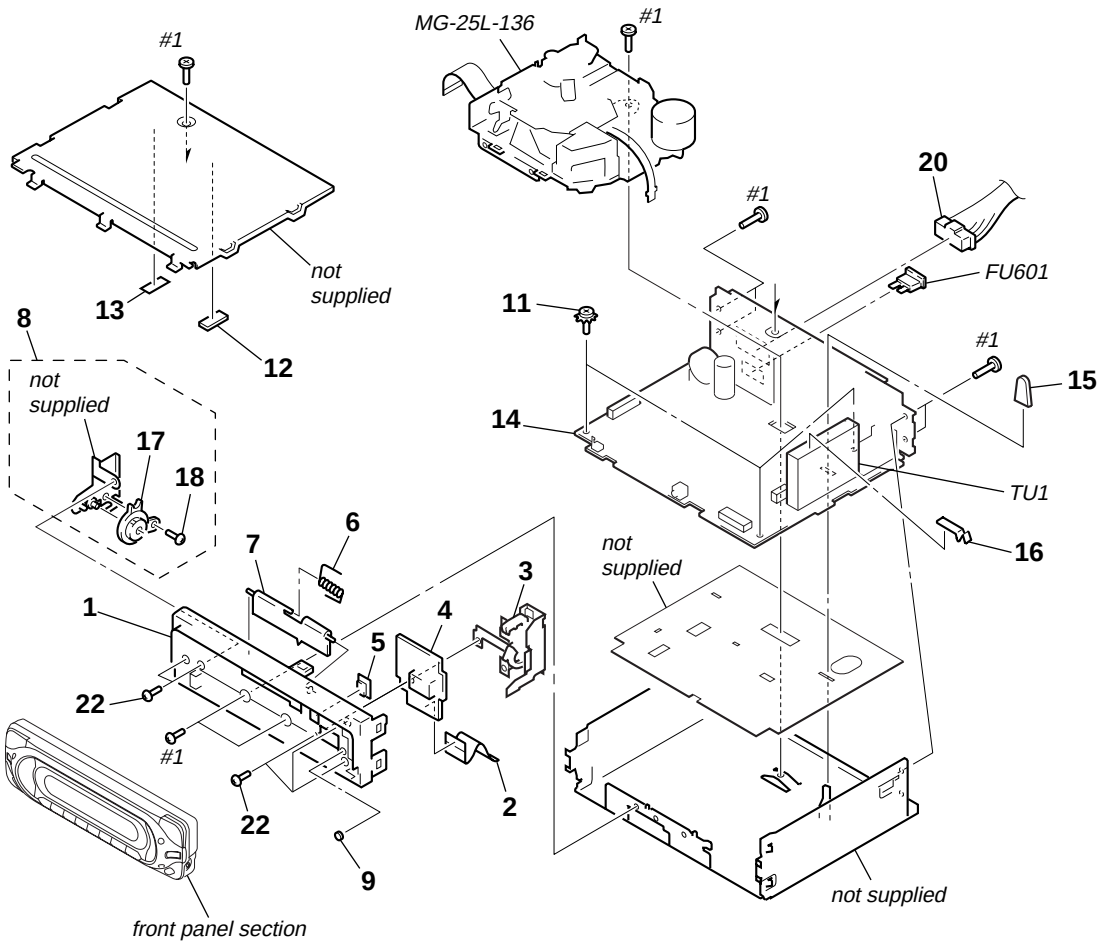
Pin No.	Pin Name	I/O	Description
44	BUSCKO	O	Serial data transfer clock signal output to the SONY bus interface
45	I2CSIO	I/O	Two-way data bus with the tuner unit and electrical volume
46	NCO	O	Not used
47	I2CCKO	O	Serial data transfer clock signal output to the tuner unit and electrical volume
48	STB	O	Standby on/off control signal output to the power amplifier "L": standby mode, "H": amplifier on
49	NCO	O	Not used
50	ATT	O	Audio line muting on/off control signal output "H": muting on
51	NCO	O	Not used
52	$\overline{\text{AMSON}}$	O	Tape auto music sensor control signal output "L": auto music sensor on
53	N_ROUT	O	Forward/reverse control signal output "L": reverse direction, "H": forward direction
54	MTLON	I/O	METAL control in/out terminal At initial mode: valid/invalid selection input of METAL function (valid at "L" input) At normal mode: METAL on/off control signal output (METAL on at "H" output)
55	TAPATT	O	Tape muting on/off control signal output "H": muting on Active at ATA, FF/REW mode
56	NCO	O	Not used
57	$\overline{\text{AMSIN}}$	I	Whether a music is present or not is detected at auto music sensor "L": music is present, "H": music is not present
58	NCO	O	Not used
59	$\overline{\text{VOLATT}}$	O	Pre amplifier muting on/off control signal output to the electrical volume "L": muting on
60 to 64	NCO	O	Not used
65	$\overline{\text{FLASH\_W}}$	I	Internal flash memory data write mode detection signal input terminal "L": data write mode
66	$\overline{\text{TESTIN}}$	I	Setting terminal for the test mode "L": test mode, normally fixed at "H"
67	$\overline{\text{RC\_IN1}}$	I	Rotary remote commander shift key input terminal "L": shift key on
68 to 70	NCO	O	Not used
71	DIAG	I	State input from power amplifier
72	$\overline{\text{TUATT}}$	O	Tuner muting on/off control signal output to the tuner unit "L": muting on
73	NCO	O	Not used
74	EE_SIO	I/O	Two-way data bus for tuner EEPROM with the tuner unit
75	EE_CKO	O	Two-way bus clock signal for tuner EEPROM with the tuner unit
76, 77	NCO	O	Not used
78	$\overline{\text{DOORSW}}$	I	Front panel open/close detection signal input "L" is input when the front panel is closed
79	DOORIND	O	LED drive signal output of the cassete tape slot illumination and ⏏ indicator "H": LED on "H" is output to turn on the LED when front panel is opened
80, 81	NCO	O	Not used
82	$\overline{\text{AD ON}}$	O	A/D converter power control signal output When the KEYACK (pin ㉖) that controls reference voltage power for key A/D conversion input is active, "L" is output from this terminal to enable the input
83	NCO	O	Not used
84	REL_T	I	Rotation detection signal input from supply reel sensor and take-up reel sensor on the mechanism deck

Pin No.	Pin Name	I/O	Description
85	POS3	I	Tape position (EJECT/FF/REW/REV/ FWD mode) detect input from the tape operation switch on the deck mechanism POS3: "L": REV and EJECT mode, "H": others mode POS2: "L": REW mode, "H": others mode POS0: "L": EJECT mode, "H": others mode POS1: "L": PLAY and FF in FWD mode, and REW in REV mode, "H": others mode
86	POS2	I	
87	POS0	I	
88	POS1	I	
89	LM_LO	O	Motor drive signal output to the loading motor drive "H" active (For the loading direction and forward side operation)
90	LM_EJ	O	Motor drive signal output to the loading motor drive "H" active (For the eject direction and reverse side operation)
91	TAPEON	O	Power on/off control signal output of the loading motor drive and capstan/reel motor "H": motor on Not used
92	CM_ON	O	Capstan/reel motor drive signal output "H": motor on
93	$\overline{\text{NOSESW}}$	I	Front panel block remove/attach detection signal input from the nose detection switch "L": front panel is attached, "H": front panel is removed
94	NS_MASK	O	Not used
95	DAVSS	—	Ground terminal (for D/A converter)
96 to 99	NCO	O	Not used
100	DAVDD	—	Power supply terminal (+5V) (for D/A converter)

SECTION 7
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

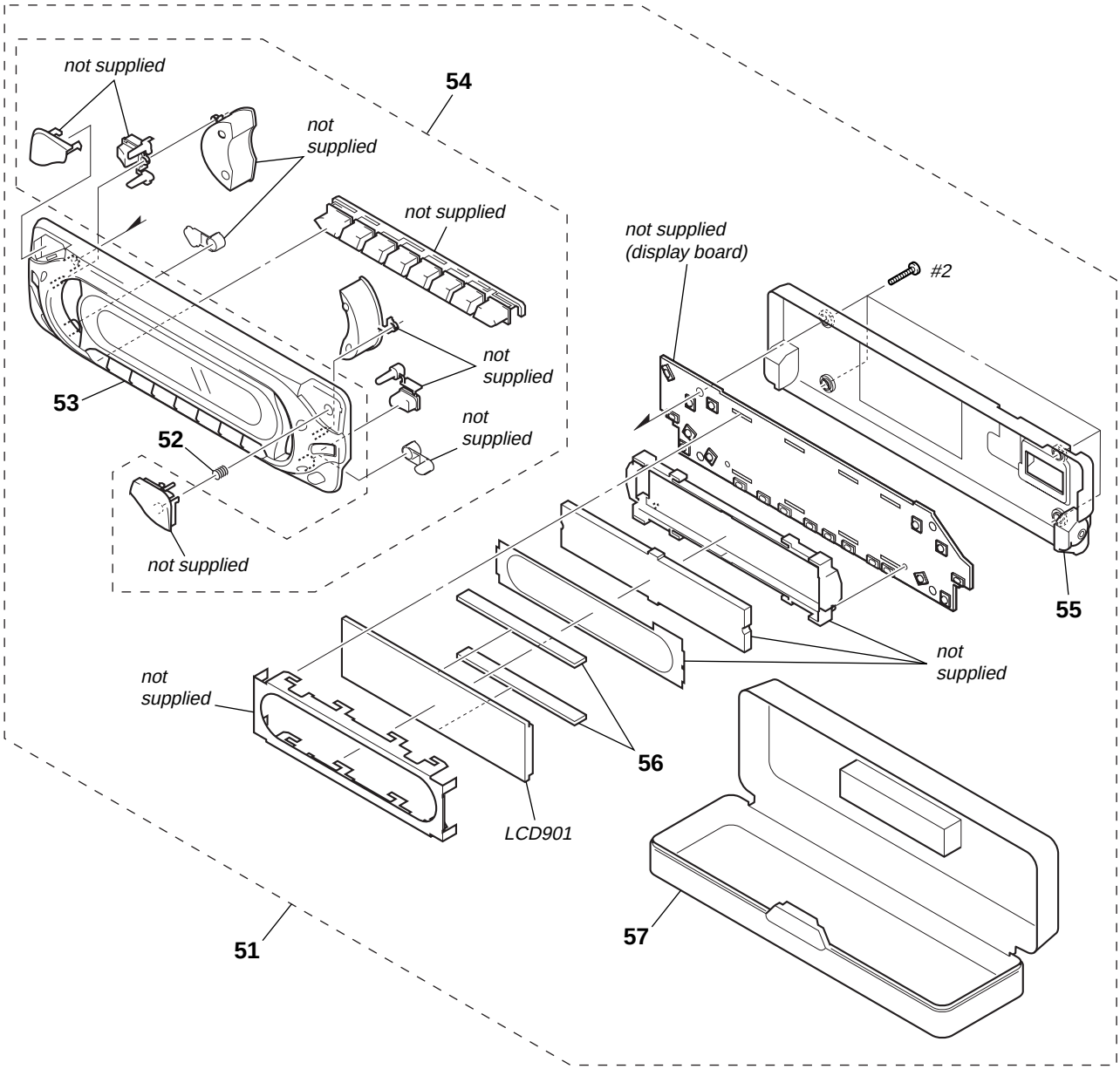
7-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	X-3382-790-1	PANEL ASSY, SUB	
2	1-792-195-11	CABLE, FLEXIBLE FLAT (14CORE)	
3	X-3381-381-3	LOCK ASSY	
4	1-687-316-11	SUB BOARD	
5	3-040-990-01	BUTTON (EJECT) (⏏)	
6	3-935-003-01	SPRING, TORSION	
7	3-027-437-12	DOOR, CASSETTE	
8	X-3376-699-6	GEAR ASSY	
9	3-243-177-01	CUSHION (SUB PANEL)	
11	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
* 12	3-046-991-01	SPACER (COVER R)	
* 13	3-046-990-01	SPACER (COVER L)	

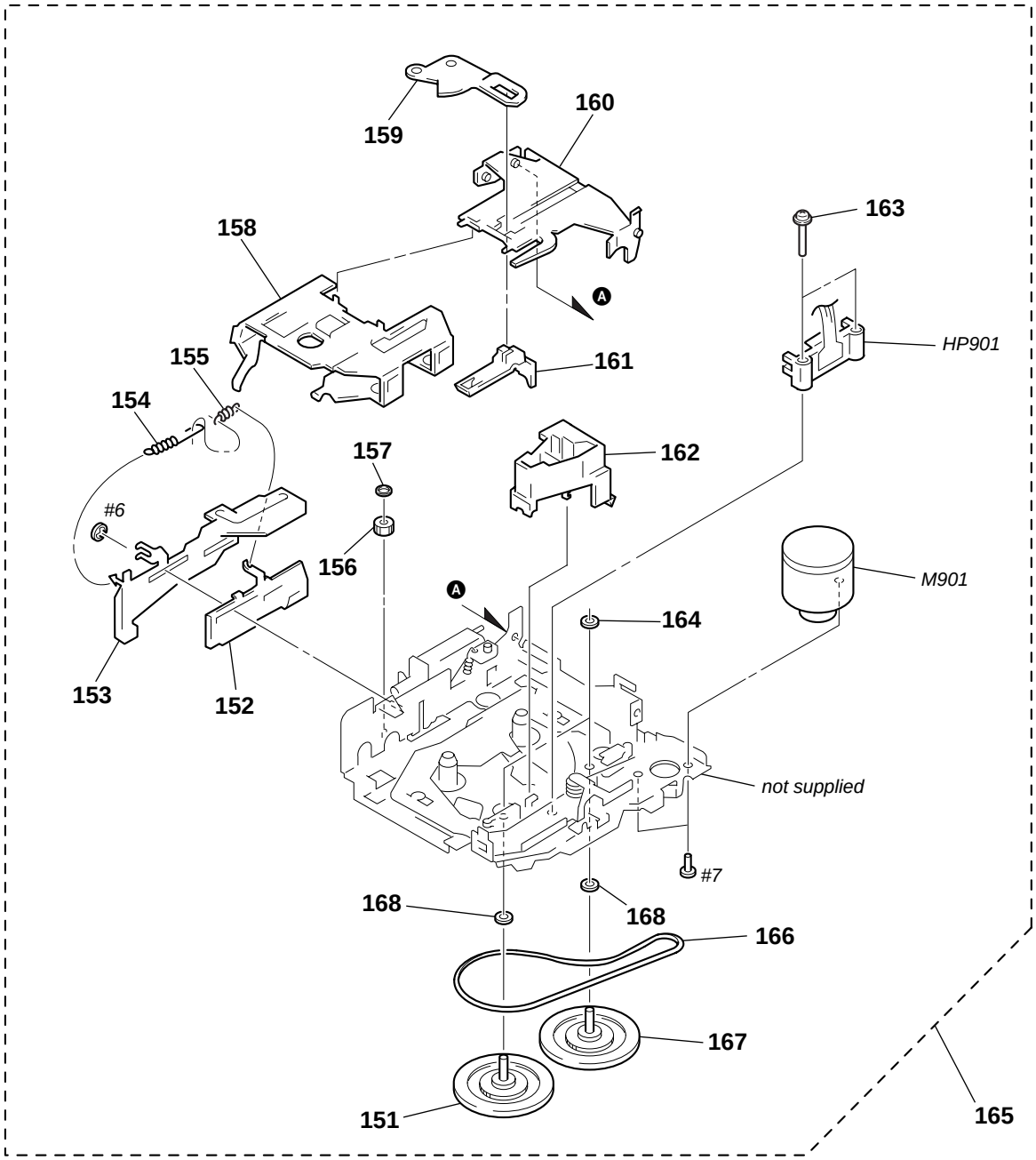
Ref. No.	Part No.	Description	Remark
14	A-3274-653-A	MAIN BOARD, COMPLETE (E)	
14	A-3274-654-A	MAIN BOARD, COMPLETE (Saudi Arabia)	
15	3-012-859-21	CAP (25), RUBBER	
16	3-246-481-01	PLATE (TU), GROUND	
17	3-030-909-03	DAMPER, OIL	
18	3-713-786-51	SCREW (M2X3)	
20	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
22	3-042-244-01	SCREW (T)	
FU601	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A/32V)	
TU1	A-3220-887-A	TUNER UNIT (TUX-030//Q) (E)	
TU1	A-3220-913-A	TUNER UNIT (TUX-030//Q2) (Saudi Arabia)	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	A-3337-456-A	PANEL OVERALL ASSY, FRONT	
52	3-246-534-01	SPRING (RELEASE)	
53	X-3383-170-1	PANEL (S) ASSY, FRONT	
54	X-3383-169-1	BUTTON ASSY (S)	
55	X-3382-625-1	PANEL ASSY, FRONT BACK	
56	1-694-989-11	CONDUCTIVE BOARD, CONNECTION	
57	X-3378-390-3	CASE ASSY	
LCD901	1-805-076-11	DISPLAY PANEL, LIQUID CRYSTAL	
#2	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	

7-3. MECHANISM DECK SECTION (MG-25L-136)



Ref. No.	Part No.	Description	Remark
151	A-3291-667-A	CLUTCH (FR) ASSY	
* 152	3-019-130-01	LEVER (LDG-A)	
* 153	3-019-131-05	LEVER (LDG-B)	
154	3-228-690-01	SPRING (LD-1), TENSION	
155	3-020-540-01	SPRING (LD-2), TENSION	
156	3-020-542-01	GEAR (LOADING FT)	
157	3-341-753-11	WASHER, POLYETHYLENE	
158	3-020-533-01	HOUSING	
* 159	3-020-532-02	ARM (SUCTION)	
160	3-020-534-01	HANGER	
161	3-933-346-01	CATCHER	
162	3-933-344-22	GUIDE (C)	
163	3-927-100-21	SCREW (+PS 2X10), SPECIAL	
164	3-364-151-01	WASHER	
165	A-3220-811-A	MECHANISM DECK ASSY	
166	3-017-302-01	BELT (25)	
167	3-026-636-01	FLYWHEEL (F)	
168	3-701-437-21	WASHER	
HP901	1-500-196-31	HEAD, MAGNETIC (PLAYBACK)	
M901	A-3291-665-A	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
#6	7-624-104-04	STOP RING 2.0, TYPE-E	
#7	7-627-553-17	SCREW, PRECISION +P 2X2	

SECTION 8
ELECTRICAL PARTS LIST

DISPLAY

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		DISPLAY BOARD			
		**********			
	1-694-989-11	CONDUCTIVE BOARD, CONNECTION			
		< CAPACITOR >			
C951	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C952	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C953	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C954	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C955	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C956	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN901	1-817-158-11	PLUG, CONNECTOR 14P			
		< DIODE >			
D901	8-719-978-33	DIODE UDZSTE-1718B			
D902	8-719-978-33	DIODE DTZ-TT11-6.8B			
D903	8-719-978-33	DIODE DTZ-TT11-6.8B			
D904	8-719-978-33	DIODE DTZ-TT11-6.8B			
D905	8-719-988-61	DIODE 1SS355TE-17			
D907	8-719-978-33	DIODE DTZ-TT11-6.8B			
D951	8-719-069-54	DIODE UDZSTE-175.1B			
		< IC >			
IC901	8-759-826-21	IC LC75874W			
IC951	8-749-017-35	IC KSM-401N			
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-805-076-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< LED >			
LED901	8-719-053-09	LED SML-310VTT86 (SOURCE)			
LED902	8-719-053-09	LED SML-310VTT86 (EQ3)			
LED903	8-719-053-09	LED SML-310VTT86 (EQ3)			
LED904	8-719-053-09	LED SML-310VTT86 (DSO)			
LED905	8-719-053-09	LED SML-310VTT86 (DSO)			
LED906	8-719-053-09	LED SML-310VTT86 (SEEK + ▶▶I ▶▶ – I◀◀ ◀◀)			
LED910	6-500-459-01	LED NSCW505T-ARS (LCD BACK LIGHT)			
LED911	6-500-459-01	LED NSCW505T-ARS (LCD BACK LIGHT)			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
LSW901	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (OFF)			
LSW902	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (MODE ◀I▶)			
LSW903	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SEL)			
LSW904	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (+ (VOLUME))			
LSW905	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (– (VOLUME))			
LSW906	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (ATT)			
LSW907	1-771-883-31	SWITCH, TACTILE (WITH LED) (BTM/MTL, SENS)			
LSW908	1-771-883-31	SWITCH, TACTILE (WITH LED) (1, DISC–)			
LSW909	1-771-883-31	SWITCH, TACTILE (WITH LED) (2, DISC+)			
LSW910	1-771-883-31	SWITCH, TACTILE (WITH LED) (3, REP)			
LSW911	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (+ ▶▶I ▶▶, SEEK)			
LSW912	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (– I◀◀ ◀◀, SEEK)			
LSW913	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
LSW914	1-771-883-31	SWITCH, TACTILE (WITH LED) (LIST)			
LSW915	1-771-883-31	SWITCH, TACTILE (WITH LED) (6, ALBM+/ATA)			
LSW916	1-771-883-31	SWITCH, TACTILE (WITH LED) (5, BL SKIP/ALBM–)			
LSW917	1-771-883-31	SWITCH, TACTILE (WITH LED) (4, SHUF)			
		< RESISTOR >			
R901	1-216-819-11	METAL CHIP	680	5%	1/10W
R902	1-216-819-11	METAL CHIP	680	5%	1/10W
R903	1-216-819-11	METAL CHIP	680	5%	1/10W
R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
R905	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R906	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R907	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R908	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R909	1-216-834-11	METAL CHIP	12K	5%	1/10W
R910	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R912	1-216-819-11	METAL CHIP	680	5%	1/10W
R913	1-216-819-11	METAL CHIP	680	5%	1/10W
R914	1-216-819-11	METAL CHIP	680	5%	1/10W
R915	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R916	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R917	1-216-823-11	METAL CHIP	1.5K	5%	1/10W

DISPLAY MAIN

Ref. No.	Part No.	Description			Remark
R918	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R919	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R920	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R940	1-216-815-11	METAL CHIP	330	5%	1/10W
R941	1-216-817-11	METAL CHIP	470	5%	1/10W
R942	1-216-815-11	METAL CHIP	330	5%	1/10W
R943	1-216-817-11	METAL CHIP	470	5%	1/10W
R951	1-216-815-11	METAL CHIP	330	5%	1/10W
R952	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R953	1-216-821-11	METAL CHIP	1K	5%	1/10W
R954	1-216-821-11	METAL CHIP	1K	5%	1/10W
R955	1-216-821-11	METAL CHIP	1K	5%	1/10W
R956	1-216-821-11	METAL CHIP	1K	5%	1/10W
R957	1-216-850-11	METAL CHIP	270K	5%	1/10W
R958	1-216-809-11	METAL CHIP	100	5%	1/10W
R959	1-216-821-11	METAL CHIP	1K	5%	1/10W
R960	1-216-821-11	METAL CHIP	1K	5%	1/10W
R961	1-216-857-11	METAL CHIP	1M	5%	1/10W
R962	1-216-821-11	METAL CHIP	1K	5%	1/10W
R966	1-216-815-11	METAL CHIP	330	5%	1/10W
R967	1-216-817-11	METAL CHIP	470	5%	1/10W
R968	1-216-815-11	METAL CHIP	330	5%	1/10W
R969	1-216-817-11	METAL CHIP	470	5%	1/10W
R972	1-216-809-11	METAL CHIP	100	5%	1/10W
R973	1-216-809-11	METAL CHIP	100	5%	1/10W
R974	1-216-809-11	METAL CHIP	100	5%	1/10W
R975	1-216-809-11	METAL CHIP	100	5%	1/10W
R976	1-216-809-11	METAL CHIP	100	5%	1/10W
R977	1-216-809-11	METAL CHIP	100	5%	1/10W
R978	1-216-811-11	METAL CHIP	150	5%	1/10W
R979	1-216-811-11	METAL CHIP	150	5%	1/10W
R980	1-216-809-11	METAL CHIP	100	5%	1/10W
R981	1-216-809-11	METAL CHIP	100	5%	1/10W
R982	1-216-809-11	METAL CHIP	100	5%	1/10W
R983	1-216-809-11	METAL CHIP	100	5%	1/10W
		< SWITCH >			
S901	1-771-884-11	SWITCH, TACTILE (SOURCE)			
S902	1-771-884-31	SWITCH, TACTILE (EQ3)			
S903	1-771-884-31	SWITCH, TACTILE (DSO)			

****

	A-3274-653-A	MAIN BOARD, COMPLETE (E)
	A-3274-654-A	MAIN BOARD, COMPLETE (Saudi Arabia)
		**********
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
	7-685-793-09	SCREW +PTT 2.6X8 (S)
	7-685-795-09	SCREW +PTT 2.6X12 (S)

< CAPACITOR >

C12	1-124-584-00	ELECT	100uF	20%	10V
C13	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C14	1-124-589-11	ELECT	47uF	20%	16V
C15	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C19	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C81	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C82	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C85	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C86	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C87	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C101	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C102	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C143	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C144	1-104-942-11	ELECT	1uF	20%	50V
C201	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C202	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C203	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C204	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C205	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C242	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C243	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C244	1-104-942-11	ELECT	1uF	20%	50V
C301	1-124-234-00	ELECT	22uF	20%	16V
C302	1-124-234-00	ELECT	22uF	20%	16V
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C305	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C306	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C308	1-124-233-11	ELECT	10uF	20%	16V
C309	1-126-160-11	ELECT	1uF	20%	50V
C310	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C351	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C352	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C353	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C354	1-124-233-11	ELECT	10uF	20%	16V
C356	1-126-934-11	ELECT	220uF	20%	16V
C357	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C358	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C401	1-124-233-11	ELECT	10uF	20%	16V
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C403	1-124-589-11	ELECT	47uF	20%	16V
C411	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C412	1-136-154-00	FILM	0.012uF	5%	50V
C413	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C421	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C422	1-136-154-00	FILM	0.012uF	5%	50V
C423	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C431	1-124-233-11	ELECT	10uF	20%	16V
C432	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C441	1-124-233-11	ELECT	10uF	20%	16V
C442	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C444	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C451	1-124-233-11	ELECT	10uF	20%	16V
C452	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C454	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C461	1-124-233-11	ELECT	10uF	20%	16V
C462	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C479	1-124-589-11	ELECT	47uF	20%	16V
C501	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C502	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C503	1-162-917-11	CERAMIC CHIP	15PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C504	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C505	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-124-589-11	ELECT	47uF	20%	16V
C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C515	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C516	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C517	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C521	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C581	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C583	1-126-935-11	ELECT	470uF	20%	16V
C601	1-107-885-31	ELECT	3300uF	20%	16V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C609	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C617	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C618	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C619	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C621	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C622	1-125-710-11	DOUBLE LAYER	0.1F		5.5V
C623	1-124-584-00	ELECT	100uF	20%	10V
C631	1-124-257-00	ELECT	2.2uF	20%	50V
C751	1-124-234-00	ELECT	22uF	20%	16V
C752	1-124-257-00	ELECT	2.2uF	20%	50V
C753	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C754	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C755	1-124-233-11	ELECT	10uF	20%	16V
C756	1-124-233-11	ELECT	10uF	20%	16V
C757	1-124-233-11	ELECT	10uF	20%	16V
C758	1-124-233-11	ELECT	10uF	20%	16V
C759	1-124-584-00	ELECT	100uF	20%	10V
C762	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C763	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C764	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C765	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C766	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		< CONNECTOR >			
CN301	1-785-694-11	CONNECTOR, FFC/FPC 7P			
CN351	1-784-490-11	CONNECTOR, FFC/FPC 11P			
CN581	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)			
CN701	1-784-456-11	CONNECTOR, FFC/FPC 14P			
CNP601	1-774-701-21	PIN, CONNECTOR 16P			
		< DIODE >			
D352	8-719-970-02	DIODE	1SR139-400		
D479	8-719-404-50	DIODE	MA111-TX		
D581	8-719-422-64	DIODE	MA8062-M		
D582	8-719-057-80	DIODE	MA8180-M-TX		
D584	8-719-057-80	DIODE	MA8180-M-TX		
D585	8-719-072-70	DIODE	MA2ZD14001S0		
D586	8-719-057-80	DIODE	MA8180-M-TX		
D601	8-719-049-38	DIODE	1N5404TU		
D609	8-719-977-12	DIODE	DTZ6.8B		
D612	8-719-970-02	DIODE	1SR139-400		
D613	8-719-970-02	DIODE	1SR139-400		
D617	8-719-970-02	DIODE	1SR139-400		
D618	8-719-970-02	DIODE	1SR139-400		

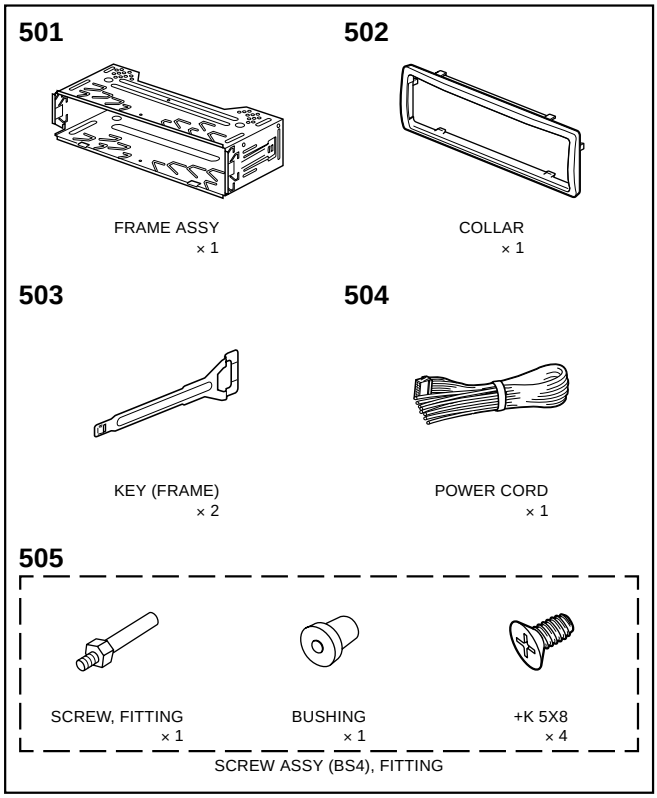
Ref. No.	Part No.	Description	Remark
D671	8-719-404-50	DIODE MA111-TX	
D701	8-719-404-50	DIODE MA111-TX	
D710	8-719-977-12	DIODE DTZ6.8B	
D711	8-719-977-12	DIODE DTZ6.8B	
D712	8-719-977-12	DIODE DTZ6.8B	
D713	8-719-977-12	DIODE DTZ6.8B	
D714	8-719-057-80	DIODE MA8180-M-TX	
D715	8-719-977-12	DIODE DTZ6.8B	
D716	8-719-977-12	DIODE DTZ6.8B	
D717	8-719-977-12	DIODE DTZ6.8B	
D718	8-719-977-12	DIODE DTZ6.8B	
D719	8-719-057-80	DIODE MA8180-M-TX	
D751	8-719-970-02	DIODE 1SR139-400	
D752	8-719-970-02	DIODE 1SR139-400	
D753	8-719-970-02	DIODE 1SR139-400	
D754	8-719-970-02	DIODE 1SR139-400	
D755	8-719-970-02	DIODE 1SR139-400	
D756	8-719-970-02	DIODE 1SR139-400	
D757	8-719-970-02	DIODE 1SR139-400	
D758	8-719-970-02	DIODE 1SR139-400	
		< IC >	
IC301	6-703-669-01	IC HA12231FP	
IC351	8-759-527-33	IC LB1930M-TLM	
IC401	6-703-304-01	IC BD3802F-FE2	
IC501	6-802-514-01	IC MN101C49KSK	
IC581	8-759-449-89	IC BA8270F-E2	
IC602	8-759-682-69	IC XC61CN4302MR	
IC751	6-703-375-01	IC TDA8588J/N1	
		< JACK >	
J10	1-815-185-12	JACK (ANT) (FM/AM ANTENNA)	
J331	1-774-699-12	JACK, PIN 4P (AUDIO OUT REAR, BUS AUDIO IN)	
J671	1-566-822-41	JACK (REMOTE IN)	
		< SHORT >	
JC11	1-216-864-11	SHORT CHIP 0	
JC81	1-216-296-00	SHORT CHIP 0	
JC301	1-216-864-11	SHORT CHIP 0	
JC302	1-216-864-11	SHORT CHIP 0	
JC303	1-216-864-11	SHORT CHIP 0	
JC401	1-216-296-00	SHORT CHIP 0	
JC402	1-216-296-00	SHORT CHIP 0	
JC403	1-216-296-00	SHORT CHIP 0	
JC404	1-216-864-11	SHORT CHIP 0	
JC502	1-216-864-11	SHORT CHIP 0	
JC503	1-216-864-11	SHORT CHIP 0	
JC751	1-216-296-00	SHORT CHIP 0	
		< COIL >	
L11	1-469-844-11	INDUCTOR 2.2uH	
L12	1-469-844-11	INDUCTOR 2.2uH	
L500	1-419-476-11	COIL, CHOKE 250uH	
L501	1-410-750-41	INDUCTOR 0.47uH	

MAIN

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q301	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q353	8-729-421-22	TRANSISTOR	UN2211		
Q354	8-729-106-60	TRANSISTOR	2SB1115A		
Q431	8-729-920-21	TRANSISTOR	DTC314TK-T-146		
Q441	8-729-920-21	TRANSISTOR	DTC314TK-T-146		
Q451	8-729-920-21	TRANSISTOR	DTC314TK-T-146		
Q461	8-729-920-21	TRANSISTOR	DTC314TK-T-146		
Q478	8-729-424-18	TRANSISTOR	UN2113		
Q479	8-729-424-08	TRANSISTOR	UN2111		
Q581	8-729-421-22	TRANSISTOR	UN2211		
Q631	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q641	8-729-047-76	TRANSISTOR	FMC2A-T148		
Q651	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q664	8-729-424-08	TRANSISTOR	UN2111		
		< RESISTOR >			
R11	1-216-809-11	METAL CHIP	100	5%	1/10W
R12	1-216-809-11	METAL CHIP	100	5%	1/10W
R103	1-216-833-11	METAL CHIP	10K	5%	1/10W
R104	1-216-835-11	METAL CHIP	15K	5%	1/10W
R105	1-216-838-11	METAL CHIP	27K	5%	1/10W
R141	1-216-833-11	METAL CHIP	10K	5%	1/10W
R142	1-216-821-11	METAL CHIP	1K	5%	1/10W
R203	1-216-833-11	METAL CHIP	10K	5%	1/10W
R204	1-216-835-11	METAL CHIP	15K	5%	1/10W
R205	1-216-838-11	METAL CHIP	27K	5%	1/10W
R241	1-216-833-11	METAL CHIP	10K	5%	1/10W
R242	1-216-821-11	METAL CHIP	1K	5%	1/10W
R301	1-216-851-11	METAL CHIP	330K	5%	1/10W
R302	1-216-835-11	METAL CHIP	15K	5%	1/10W
R303	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R304	1-249-393-11	CARBON	10	5%	1/4W
R352	1-249-383-11	CARBON	1.5	5%	1/4W
R353	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R354	1-216-833-11	METAL CHIP	10K	5%	1/10W
R401	1-218-882-11	METAL CHIP	30K	0.5%	1/10W
R402	1-216-809-11	METAL CHIP	100	5%	1/10W
R403	1-216-809-11	METAL CHIP	100	5%	1/10W
R404	1-249-393-11	CARBON	10	5%	1/4W
R411	1-216-833-11	METAL CHIP	10K	5%	1/10W
R412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W
R422	1-216-833-11	METAL CHIP	10K	5%	1/10W
R431	1-216-809-11	METAL CHIP	100	5%	1/10W
R432	1-216-809-11	METAL CHIP	100	5%	1/10W
R433	1-216-841-11	METAL CHIP	47K	5%	1/10W
R434	1-216-821-11	METAL CHIP	1K	5%	1/10W
R441	1-216-809-11	METAL CHIP	100	5%	1/10W
R442	1-216-809-11	METAL CHIP	100	5%	1/10W
R443	1-216-841-11	METAL CHIP	47K	5%	1/10W
R444	1-216-821-11	METAL CHIP	1K	5%	1/10W
R451	1-216-809-11	METAL CHIP	100	5%	1/10W
R452	1-216-809-11	METAL CHIP	100	5%	1/10W
R453	1-216-841-11	METAL CHIP	47K	5%	1/10W
R454	1-216-821-11	METAL CHIP	1K	5%	1/10W
R461	1-216-809-11	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R462	1-216-809-11	METAL CHIP	100	5%	1/10W
R463	1-216-841-11	METAL CHIP	47K	5%	1/10W
R464	1-216-821-11	METAL CHIP	1K	5%	1/10W
R479	1-216-805-11	METAL CHIP	47	5%	1/10W
R501	1-216-837-11	METAL CHIP	22K	5%	1/10W
R502	1-216-813-11	METAL CHIP	220	5%	1/10W
R503	1-216-845-11	METAL CHIP	100K	5%	1/10W
R504	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R505	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R506	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R507	1-216-841-11	METAL CHIP	47K	5%	1/10W
R508	1-216-845-11	METAL CHIP	100K	5%	1/10W
R509	1-216-813-11	METAL CHIP	220	5%	1/10W
R516	1-216-845-11	METAL CHIP	100K	5%	1/10W
R518	1-216-845-11	METAL CHIP	100K	5%	1/10W
R519	1-216-845-11	METAL CHIP	100K	5%	1/10W
R520	1-216-841-11	METAL CHIP	47K	5%	1/10W
R521	1-216-837-11	METAL CHIP	22K	5%	1/10W
R522	1-216-837-11	METAL CHIP	22K	5%	1/10W
R523	1-216-837-11	METAL CHIP	22K	5%	1/10W
R524	1-216-845-11	METAL CHIP	100K	5%	1/10W
R526	1-216-845-11	METAL CHIP	100K	5%	1/10W
R527	1-216-864-11	SHORT CHIP	0		
R528	1-216-845-11	METAL CHIP	100K	5%	1/10W
R529	1-216-833-11	METAL CHIP	10K	5%	1/10W
R530	1-216-833-11	METAL CHIP	10K	5%	1/10W
R531	1-216-841-11	METAL CHIP	47K	5%	1/10W (Saudi Arabia)
R532	1-216-845-11	METAL CHIP	100K	5%	1/10W (Saudi Arabia)
R533	1-216-845-11	METAL CHIP	100K	5%	1/10W (E)
R534	1-216-845-11	METAL CHIP	100K	5%	1/10W (E)
R536	1-216-845-11	METAL CHIP	100K	5%	1/10W (E)
R537	1-216-845-11	METAL CHIP	100K	5%	1/10W
R538	1-216-845-11	METAL CHIP	100K	5%	1/10W
R539	1-216-845-11	METAL CHIP	100K	5%	1/10W
R540	1-216-845-11	METAL CHIP	100K	5%	1/10W
R541	1-216-845-11	METAL CHIP	100K	5%	1/10W
R542	1-216-845-11	METAL CHIP	100K	5%	1/10W
R543	1-216-845-11	METAL CHIP	100K	5%	1/10W
R544	1-216-809-11	METAL CHIP	100	5%	1/10W
R546	1-216-864-11	SHORT CHIP	0		
R547	1-216-864-11	SHORT CHIP	0		
R550	1-216-833-11	METAL CHIP	10K	5%	1/10W
R551	1-216-864-11	SHORT CHIP	0		
R552	1-216-845-11	METAL CHIP	100K	5%	1/10W
R553	1-216-845-11	METAL CHIP	100K	5%	1/10W
R554	1-249-433-11	CARBON	22K	5%	1/4W
R558	1-216-864-11	SHORT CHIP	0		
R581	1-249-431-11	CARBON	15K	5%	1/4W
R582	1-249-417-11	CARBON	1K	5%	1/4W
R583	1-216-809-11	METAL CHIP	100	5%	1/10W
R584	1-216-809-11	METAL CHIP	100	5%	1/10W
R586	1-216-864-11	SHORT CHIP	0		
R609	1-249-417-11	CARBON	1K	5%	1/4W
R621	1-216-845-11	METAL CHIP	100K	5%	1/10W

MAIN **SUB**

Ref. No.	Part No.	Description			Remark
R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R632	1-216-841-11	METAL CHIP	47K	5%	1/10W
R633	1-216-841-11	METAL CHIP	47K	5%	1/10W
R634	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R636	1-216-845-11	METAL CHIP	100K	5%	1/10W
R641	1-249-417-11	CARBON	1K	5%	1/4W
R642	1-249-417-11	CARBON	1K	5%	1/4W
R651	1-249-417-11	CARBON	1K	5%	1/4W
R652	1-216-841-11	METAL CHIP	47K	5%	1/10W
R653	1-216-833-11	METAL CHIP	10K	5%	1/10W
R654	1-216-833-11	METAL CHIP	10K	5%	1/10W
R671	1-216-809-11	METAL CHIP	100	5%	1/10W
R672	1-247-807-31	CARBON	100	5%	1/4W
R673	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R674	1-216-849-11	METAL CHIP	220K	5%	1/10W
R701	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R702	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R710	1-216-809-11	METAL CHIP	100	5%	1/10W
R711	1-216-809-11	METAL CHIP	100	5%	1/10W
R712	1-216-809-11	METAL CHIP	100	5%	1/10W
R713	1-216-809-11	METAL CHIP	100	5%	1/10W
R715	1-247-807-31	CARBON	100	5%	1/4W
R716	1-216-809-11	METAL CHIP	100	5%	1/10W
R717	1-216-809-11	METAL CHIP	100	5%	1/10W
R718	1-216-809-11	METAL CHIP	100	5%	1/10W
R751	1-216-841-11	METAL CHIP	47K	5%	1/10W
R752	1-216-809-11	METAL CHIP	100	5%	1/10W
		< SWITCH >			
S501	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT) (E)			
S502	1-786-458-11	SWITCH, PUSH (1 KEY) (NOSE DETECT)			
S702	1-692-431-21	SWITCH, TACTILE (RESET)			
		< THERMISTOR >			
TH501	1-803-350-21	THERMISTOR, POSITIVE			
		< TUNER >			
TU1	A-3220-887-A	TUNER UNIT (TUX-030//Q) (E)			
TU1	A-3220-913-A	TUNER UNIT (TUX-030//Q2) (Saudi Arabia)			
		< VIBRATOR >			
X501	1-781-294-21	VIBRATOR, CRYSTAL (18.432MHz)			
X502	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
	1-687-316-11	SUB BOARD **********			
		< CONNECTOR >			
CN801	1-817-159-11	SOCKET, CONNECTOR 14P			
		< SWITCH >			
LSW801	1-771-883-31	SWITCH, TACTILE (WITH LED) (⏏)			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS **********	
* 2	1-792-195-11	CABLE, FLEXIBLE FLAT (14CORE)	
20	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
56	1-694-989-11	CONDUCTIVE BOARD, CONNECTION	
FU601	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A/32V)	
HP901	1-500-196-31	HEAD, MAGNETIC (PLAYBACK)	
M901	A-3291-665-A	MOTOR ASSY, MAIN (CAPSTAN/REEL)	
**********			
		ACCESSORIES **********	
	1-476-526-14	REMOTE COMMANDER (RM-X114)	
	3-230-047-01	LID, BATTERY CASE (for RM-X114)	
	3-247-837-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH, TRADITIONAL CHINESE) (E)	
	3-247-837-21	MANUAL, INSTRUCTION (ENGLISH ARABIC) (Saudi Arabia)	
	3-247-838-11	MANUAL, INSTRUCTION INSTALL (ENGLISH, SPANISH, TRADITIONAL CHINESE) (E)	
	3-247-838-21	MANUAL, INSTRUCTION INSTALL (ENGLISH, ARABIC) (Saudi Arabia)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS **********	
501	X-3382-647-1	FRAME ASSY, FITTING	
502	3-246-443-01	COLLAR	
503	3-246-471-01	KEY (FRAME)	
504	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
505	X-3381-154-1	SCREW ASSY (BS4), FITTING